

# 3. Joint Meeting of the Board of Trustees and Investment Advisory Committee

---



March 7, 2018



## Public Agenda Item #1.1

### *Call Meeting to Reconvene of the Board of Trustees*



March 7, 2018

## Public Agenda Item #1.2

*Call Meeting of the Investment Advisory Committee to Order*



March 7, 2018

## Public Agenda Item #2.1

*Review and Approval of the Minutes to the December 12, 2017 Joint Meeting of the Board of Trustees and Investment Advisory Committee– (Action)*



March 7, 2018

Questions?  
**Action Item**



## Public Agenda Item #2.2

*Motion to Rescind approval of the minutes for the August 23, 2017 Joint Meeting of the Board of Trustees and Investment Advisory Committee; Review and Approval of Amended Minutes of the August 23, 2017 Joint Meeting of the Board and IAC-(**Action**)*★

March 7, 2018

Questions?  
**Action Item**



## Public Agenda Item #3.1

*Executive Session – In accordance with Section 815.3016, Texas Government Code, the ERS Board of Trustees will meet in executive session to consider and discuss an alternative investment or a potential alternative investment in a private equity fund of funds. Thereafter, the Board may consider appropriate action in open session.*



March 7, 2018



## Public Agenda Item #4.1

*Review and Discussion of the Eligibility and Compliance for  
Calendar Year 2018 of the Investment Advisory Committee*



March 7, 2018

Tom Tull, CFA, Chief Investment Officer

# Eligibility and Compliance for CY 2017

## Investment Advisory Committee Skills Assessment



	Term Exp.	Investment Experience	Global Equity	Fixed Income	Private Equity	Real Estate	Hedge Funds	Infrastructure	Derivatives
IAC Chair, Caroline Cooley CIO - Diversified Funds Crestline Investors, Inc.	12/31/2019	33 years					X		X
IAC Vice-Chair, Bob Alley, CFA Retired from AIM Advisors, Inc. as Chief Fixed Income Officer	8/31/2018	42 years	X	X	X				
James Hille, CFA, CAIA CIO Texas Christian University Endowment	8/31/2020	26 years	X	X	X	X	X		
Mari Kooi Retired – Wolf Asset Management International, LLC as Chief Executive Officer	12/31/2020	30 years	X	X	X		X		X
Gene L. Needles, Jr. Chairman, President and CEO American Beacon Advisors	5/31/2020	24 years	X	X	X	X	X		X
Ken Mindell Sr. VP, Treasurer & Director of Investments Rosewood Management Corporation	5/31/2019	37 years	X	X	X	X	X		X
Dr. Laura Starks Charles E. & Sarah M. Seay Regents Chair in Business Administration Director, AIM Investment Center The University of Texas Austin	8/31/2018	29 years	X	X	X	X	X		
Lenore Sullivan Managing Director (Volunteer) TMV Capital Management Formerly, Partner at Perella Weinberg Partners	2/29/2019	37 years			X	X		X	
Didi Weinblatt, Ph.D., CFA Retired from USAA Investment Management Co. as Vice President, Mutual Fund Portfolios	8/31/2020	37 years	X	X					

Questions?



## Public Agenda Item #5.1

### *Review of Investment Performance for the Fourth Calendar Quarter of 2017*

---

★  
March 7, 2018

Sharmila Kassam, CPA, Deputy Chief Investment Officer  
Steve Voss & Mike McCormick, CFA, Aon Hewitt

# ERS Trust Fund Dashboard

## Performance

Fund	<u>CYTD</u>	<u>FYTD</u>
Performance:	16.1%	5.0%
Benchmark:	14.9%	4.6%
Excess Return:	1.2%	0.4%
3-Yr Tracking error	1.55	

### Largest Contributors (quarter):

- Outperformance of global credit and private and public real estate components

### Largest Detractors (quarter):

- Underperformance of the private equity portfolio

## Profile

### Market Value at 12/31/17:

\$28.6 Billion

### Actuarial Accrued Liability 8/31/17:

\$37.6 Billion

### Retirees and Beneficiaries 8/31/17:

107,530

### Retirement Payments Annually 8/31/17:

\$2.2 Billion

### ERS Trust Funding Ratio 8/31/17:

70.1%

## Compliance

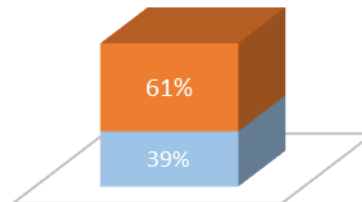
Asset Allocation Compliance: Yes

Tracking Error Compliance: Yes

Investment Policy Compliance: Yes

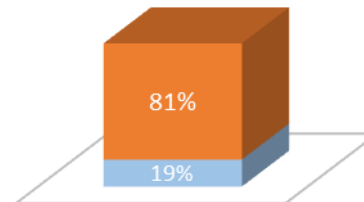
### MANAGEMENT

■ External ■ Internal



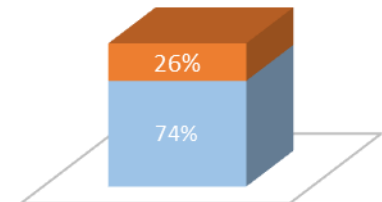
### ALLOCATION

■ Risk Reducing ■ Return Seeking



### LIQUIDITY

■ Liquid ■ Illiquid

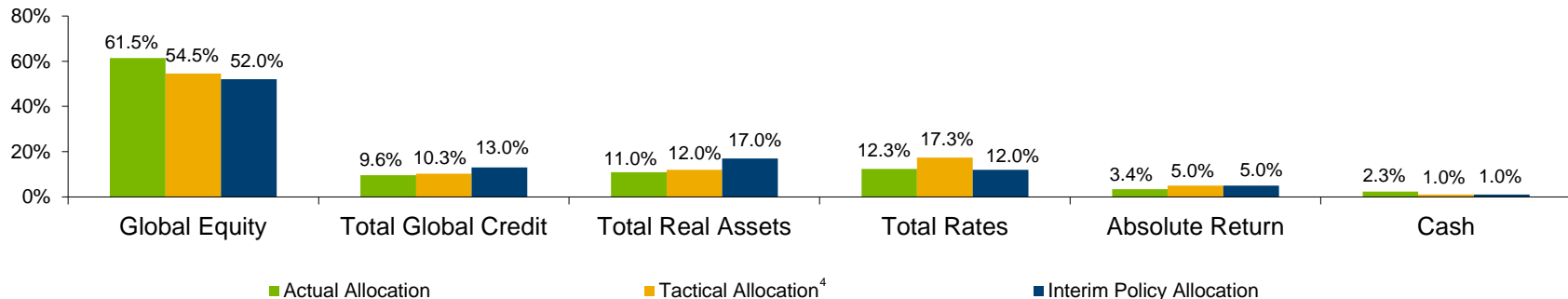


# Total Fund: Asset Allocation

## Summary of Cash Flow

	1 Quarter	Fiscal YTD	1 Year	3 Years	5 Years
<b>Total Fund</b>					
Beginning Market Value	27,797,322,053	27,531,798,643	25,590,573,174	25,598,672,543	23,216,843,609
+ Additions / Withdrawals	-305,996,455	-393,304,458	-1,064,645,235	-3,076,979,845	-5,773,022,384
+ Investment Earnings	1,063,581,654	1,416,413,067	4,028,979,312	6,033,214,554	11,111,086,027
<b>= Ending Market Value</b>	<b>28,554,907,251</b>	<b>28,554,907,251</b>	<b>28,554,907,251</b>	<b>28,554,907,251</b>	<b>28,554,907,251</b>

## Employees Retirement System of Texas - Quarterly Asset Allocation Including Risk Management vs. Policy Target as of 12/31/2017



<sup>1</sup> All returns contained in this report are shown net of investment management fees. All returns longer than 1-year are annualized.

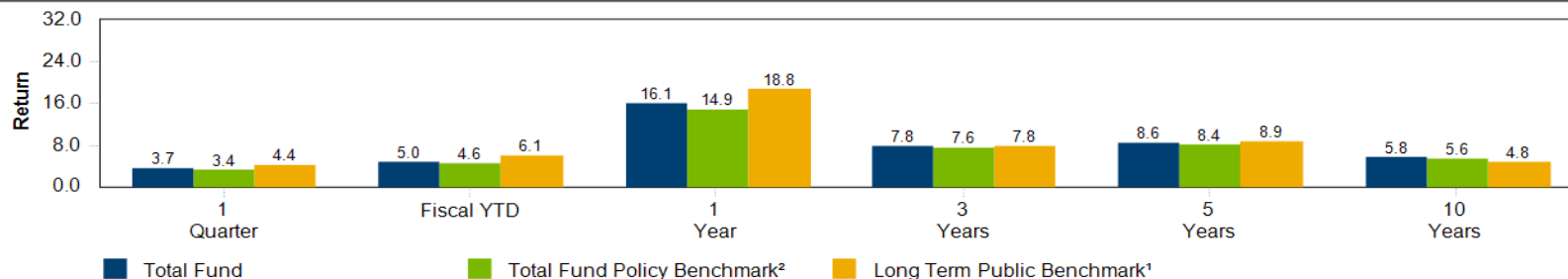
<sup>2</sup> Source data can be found on pages 31 and 40 of full report.

<sup>3</sup> Due to rounding throughout the report, percentage totals displayed may not sum to 100%.

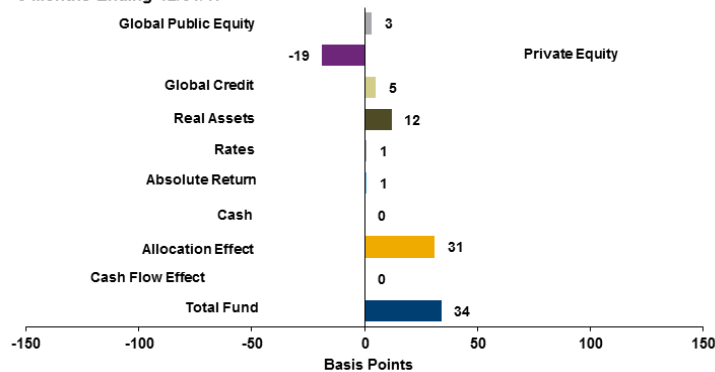
<sup>4</sup> Allocation represents the paced allocation during the transition to the new policy allocation.

# Total Fund: Performance

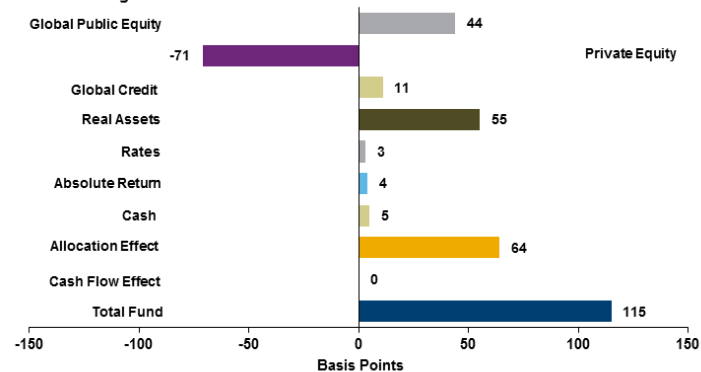
Return Summary



Total Fund Attribution Analysis  
3 Months Ending 12/31/17



Total Fund Attribution Analysis  
1 Year Ending 12/31/17

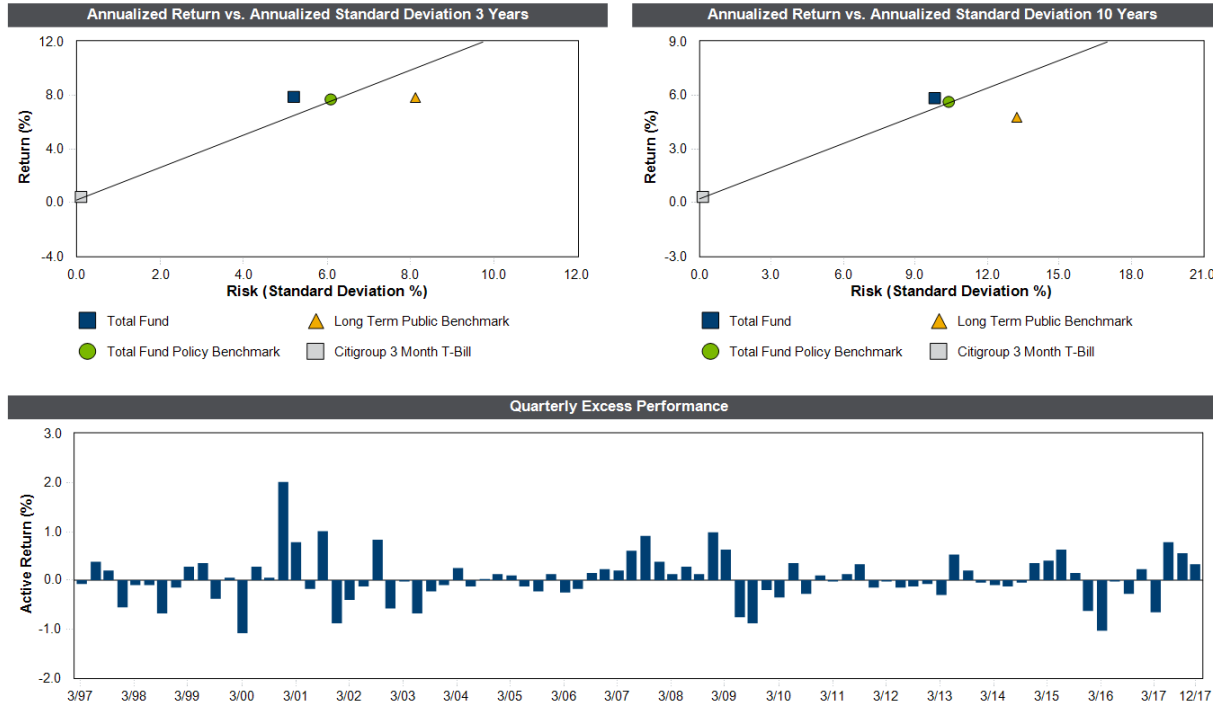


<sup>1</sup>The Long Term Public Benchmark is a combination of 79% MSCI ACW IMI and 21% Barclays Intermediate Treasury Index.

<sup>2</sup>A detailed description of the Policy Index as of 12/31/2017 is provided in the appendix of the full report.

<sup>3</sup>Source data can be found on pages 30 and 32 of full report.

# Total Fund: Risk

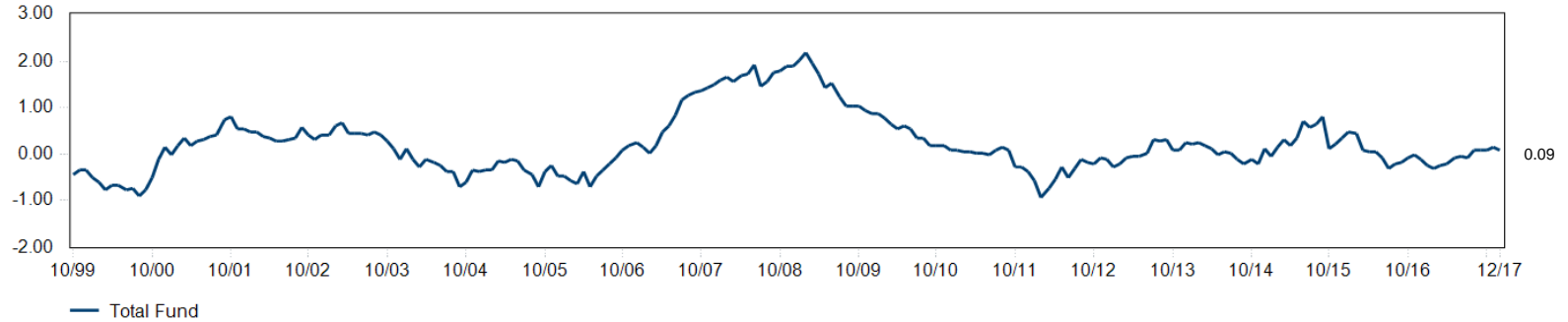


<sup>1</sup> Source data can be found on page 32 and 39 of full report.

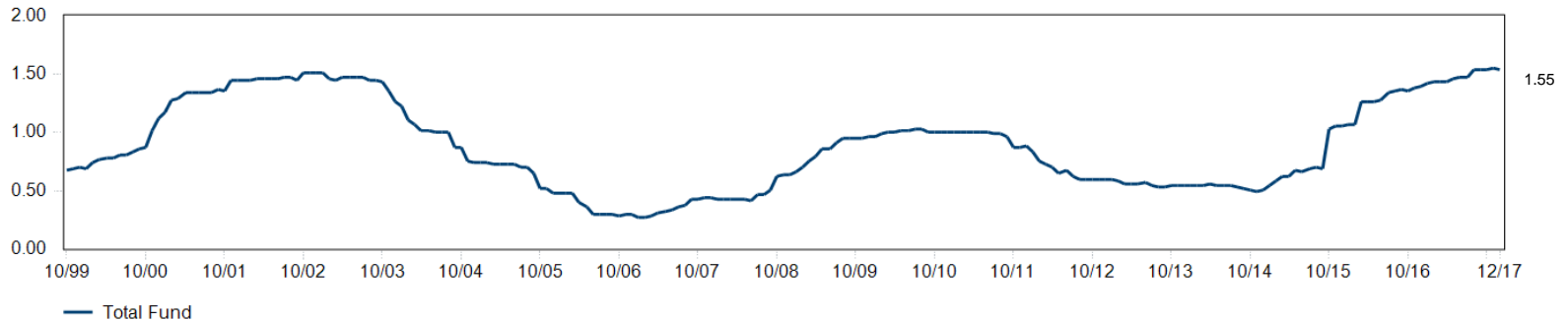


# Total Fund: Rolling Information Ratio and Tracking Error (36 months)

Information Ratio (Excess Return Ratio<sup>1</sup>)



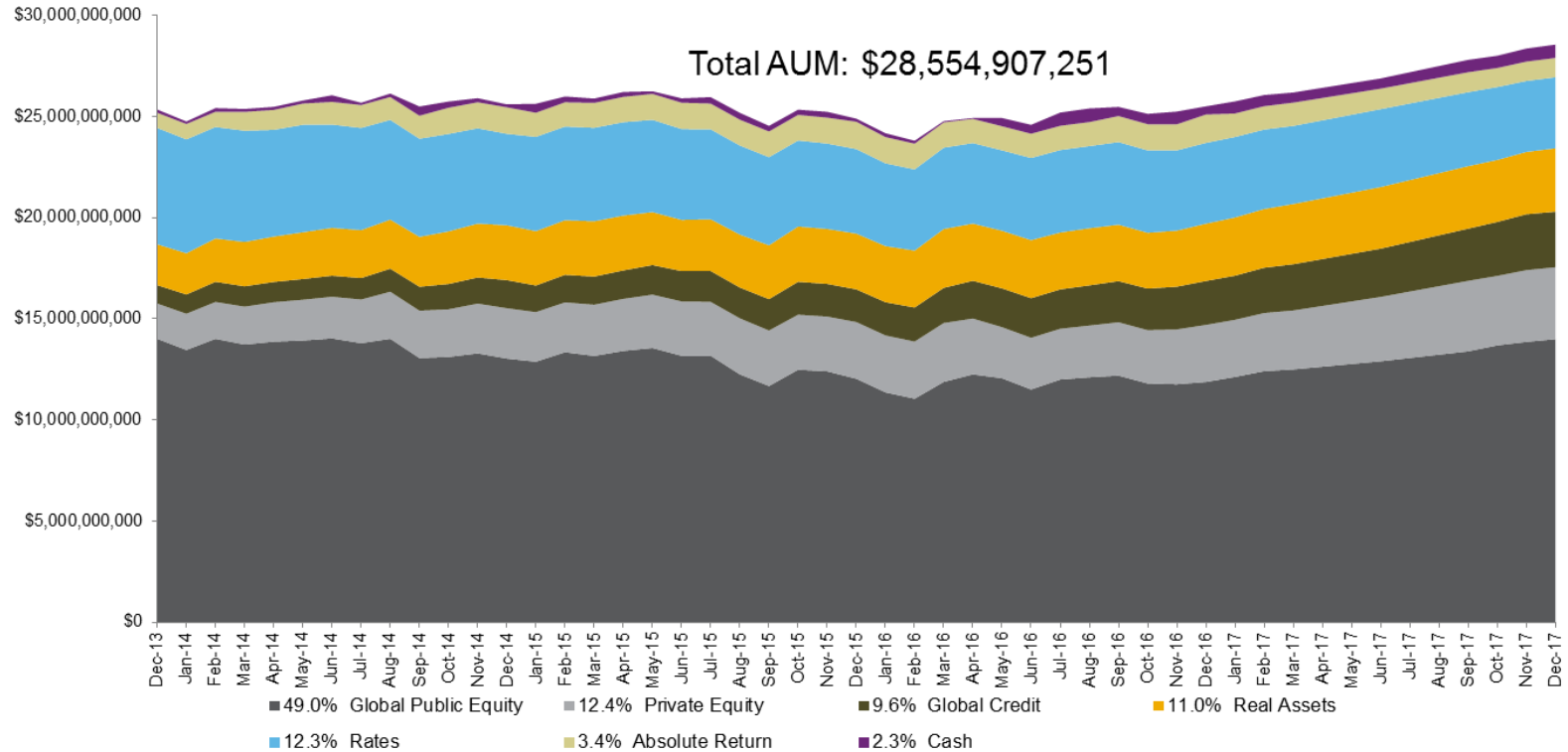
Tracking Error<sup>2</sup>



<sup>1</sup> Measured by dividing the active rate of return by the tracking error. The higher the Information Ratio, the more value-added contribution by the manager.

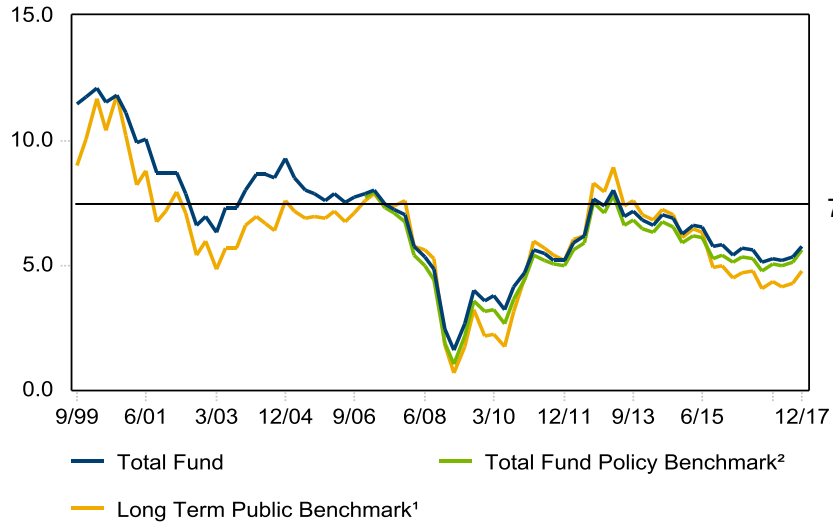
<sup>2</sup> A measure of the standard deviation of a portfolio's performance relative to the performance of an appropriate market benchmark.

# ERS Asset Allocation Evolution

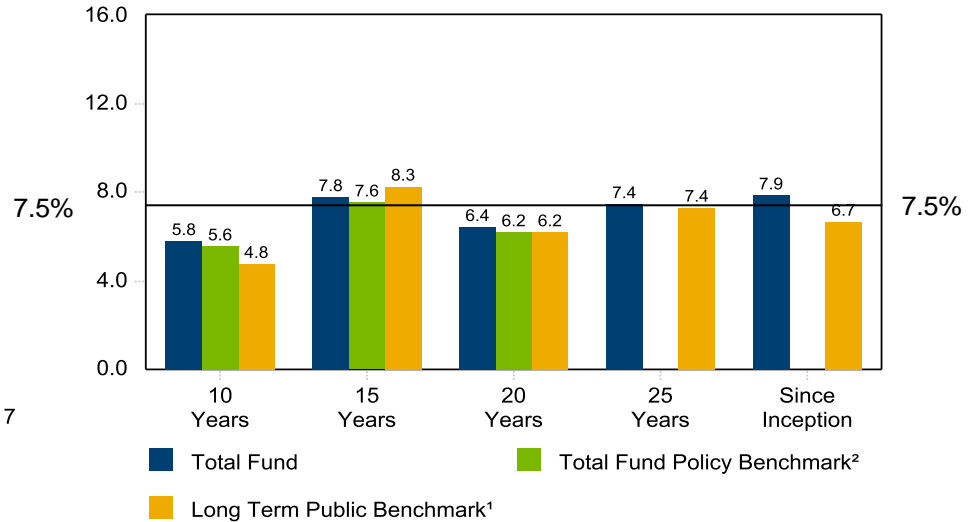


# Long Term Investment Results

Rolling 10 Year Return



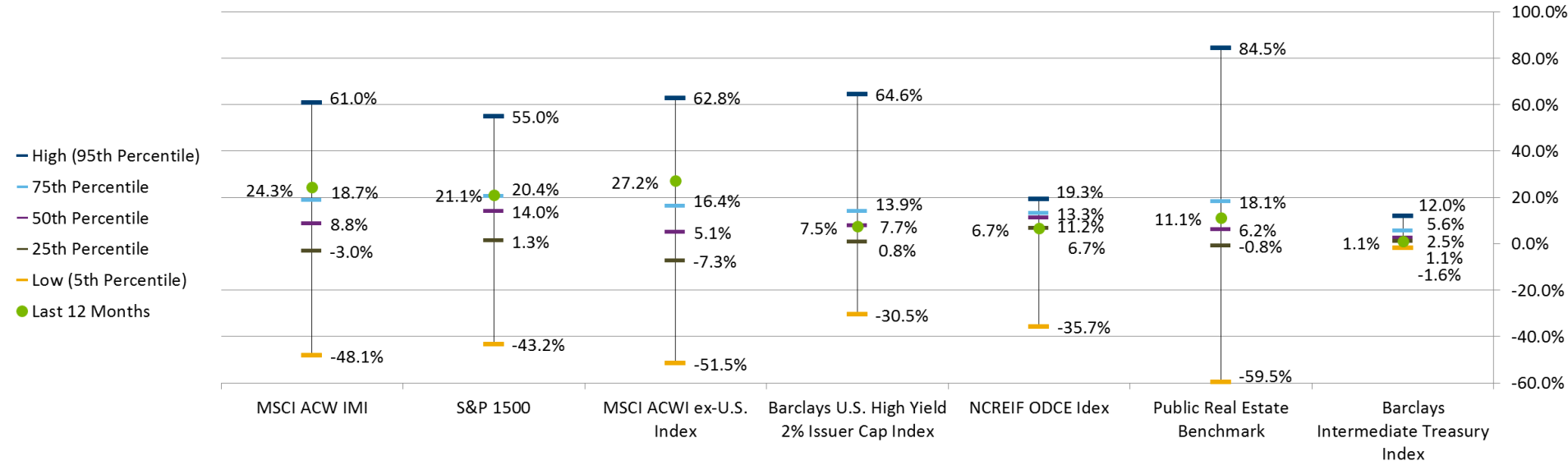
Return Summary



<sup>1</sup>The Long Term Public Benchmark is a combination of 79% MSCI ACW IMI and 21% Barclays Intermediate Treasury Index.

<sup>2</sup>The Total Fund Policy Benchmark has an inception date of 11/30/1996.

# Rolling 12-Month Capital Market Returns (10 Years ending 12/31/17)



- The chart above depicts the dispersion of rolling 12 month returns of various capital markets over the last 10 years.

# Summary Analysis

---

- The Total Fund outperformed its benchmark by 115 bps during the trailing 12 month period.
  - The real assets component contributed 55 bps while the global public equity component contributed 44 bps of relative performance.
  - Private equity detracted 71 bps of relative performance due to the asset class's lagged market valuations.
- At the end of the period global equity and cash were overweight 7.0% and 1.3%, respectively, while the total rates component was underweight 5.0% and all other asset classes were slightly underweight relative to the policy. All allocations were in compliance.
- Longer term investment results continue to be positive, the Total Fund has produced risk adjusted returns superior to the benchmark and the Long Term Public Benchmark over the five and ten year periods.
  - The Total Fund outperformed the benchmark in nominal terms by 24 bps and 19 bps over the trailing five and ten-year periods, respectively.
- Diversification has been effective, the Total Fund Policy Benchmark has produced a return similar to the Long Term Public Benchmark at a meaningfully lower level of risk (volatility) over the trailing five and ten year period.

*Staff Review of Investment Program*



March 7, 2018

Sharmila Kassam, CPA, Deputy Chief Investment Officer

# ERS Performance



## *Overview of General Plan Consultant Performance*

- Completion of Asset Allocation Study (08/23/2017)
- Quarterly Performance Reporting
- Staff Research Projects
- Investment Recommendations for Deals
- Investment Policy and Governance Review
- Trustee Training (March 2017)
- Frequent Staff Calls with an Annual Performance Review

# ERS Investment Program



## *Highlights for First Calendar Quarter of 2018*

- Rebalance equities by \$400 million in January 2018 to prune outsized gains in the month
- Seeded ETF – HYL B: Hits 2017 year end projections
- Successful 2018 Texas Emerging Manager Conference (co-sponsored with TRS) and highlighted ERS' Emerging Manager Program through Inaugural ERS Open House
- 2018 Focus on Team Development



Questions?



# Public Agenda Item #6.1

## *Review of ERS' Investment Policy*



March 7, 2018

Tom Tull, Chief Investment Officer  
Sharmila Kassam, CPA, Deputy Chief Investment Officer  
Steve Voss & Mike McCormick, CFA, Aon Hewitt

# Agenda and Goal of Today's Discussion

---

- Review of Investment Policy Statement (IPS) best practices and potential areas of refinement
- Ensure direct Board participation and feedback in the early stages of the review
- Discuss industry trends in investment policies
- Establish a plan for engaging with the Board in advance of proposed revisions to the IPS
  - To be considered for approval in May 2018

# IPS Background

---

- Adoption of the asset allocation in August 2017 was followed by major substantive changes (related to asset allocation, statutory changes and GASB requirements) that are presented in the current ERS IPS.
- Current document is being provided with a blackline document that highlights the major substantive changes to the main body of the policy
- The current IPS also has broken out asset class guidelines and procedures to list them alphabetically and separate from the main body of the policy for convenience.
  - Asset class guidelines and procedures include any substantive changes from August 2017 plus adoption of changes to private equity and new opportunistic credit allocation in December 2017.

# Current Investment Policy Composition

---

- **Main body of the Investment Policy followed by addendums:**
  - I. Active Risk Budget
  - II. Definition of Securities
  - III. ERS Proxy Voting Policy
  - IV. CFAI Standards of Professional Conduct
  - V. Placement Agent and Political Contributions Policies and Procedures
  - VI. Insider Trading and Confidentiality Policy
  - VII. Socially Constrained Investment Program Procedures
  - VIII. Emerging Manager Program Guidelines and Procedures
- **Asset Class Guidelines and Procedures**
  - Fixed Income
  - Global Public Equity
  - Hedge Funds
  - Infrastructure
  - Opportunistic Credit (without a tactical plan)
  - Private Equity
  - Real Estate

# Importance of Investment Policy and Asset Allocation

---

- The IPS is the **most important guiding document** for investment activities
- Asset allocation and security selection decisions influence total portfolio returns
- **Asset allocation is the most important** determinant of portfolio return and risk over long periods of time
  - Prominent academic studies concluded over 90% of total portfolio return and risk is explained by asset allocation decisions across time<sup>1</sup>
- When looking at performance relative to peers, asset allocation is less important in explaining performance but still accounts for 40% of the variance of returns across funds<sup>2</sup>

<sup>1</sup>Gary P. Brinson, L. Randolph Hood, and Gilbert L. Beebower, 1986, Determinants of Portfolio Performance, *Financial Analysts Journal* 42(4): 39–48 (reprint, 1995, *Financial Analysts Journal* 51[1]: 133–38, 50th Anniversary Issue)

<sup>2</sup>Roger G. Ibbotson and Paul D. Kaplan, 2000, Does Asset Allocation Policy Explain 40, 90, or 100 Percent of Performance? *Financial Analysts Journal* 56(1):26–33

# Best Practices: Recommended Components of IPS

---

## Introduction

- Reference to state or local law creating the plan
- Intended beneficiaries of the plan
- Scope of policy (e.g., limited in application to pension fund assets or it may also include other assets)

## Statement of Purpose

- The sole or fundamental purpose of the Retirement System
- Plan fiduciaries must act in the sole interest of plan participants and beneficiaries and for the exclusive purpose of providing benefits

## Investment Goals or Objectives

- To preserve the actuarial soundness of the plan in order to meet benefit obligations
- To obtain a long-term rate of return, net of fees, equal to or in excess of the policy benchmark
- The policy benchmark and asset allocation targets should be defined

# Best Practices: Recommended Components of IPS

## Asset Allocation

- Purpose is to provide an optimal mix of investments to produce desired returns and meet current and future liabilities, with minimal volatility
- Frequency and methodology of asset liability modeling and resetting allocation
- Describe permissible asset classes as well as minimum, maximum, and target ranges

## Identification of Roles and Responsibility

- Board of Trustees – general and investment related duties
- Investment Advisory Committee – role and fiduciary responsibilities
- Asset Class Investment Committees – role to make investment selections
- Internal staff – general and investment related duties with fiduciary responsibilities
- External investment consultants – advise on best practices, trends and support staff and Board/IAC with fiduciary responsibilities
- Other external providers' duties, expectations and fiduciary responsibilities

## Asset Class Guidelines / Benchmarks

- Benchmarks – who sets them and how often they are revisited, and their rationale
- Prohibited investments – investments precluded by law or regulation
- Diversification should be covered in regard to a single issuer, single asset class, economic sector, or country



# Best Practices: Recommended Components of IPS

---

## Rebalancing Policy

- Purpose of rebalancing – to ensure that the investment program adheres to its strategic asset allocation
- Describe how often the portfolio will be reviewed for rebalancing and whether a fixed threshold or proportional threshold will be used

## Risk Management

- Acknowledgement and definition of risk to be managed in investment portfolio (active risk, credit risk, counterparty risk, market risk, operational risk, etc.)
- Risk Budget
- Derivative usage permitted in risk management process

## Monitoring and Reporting

- Describe monthly, quarterly and annual reporting
- Outline monitoring and reporting process

# Best Practices: Recommended Components of IPS

---

## Shareholder Activity

- Proxy positions – describe the policy and how votes are cast and recorded
- Identify core principals of the Board (Board independence, Board management, shareholder rights) and communicate importance of fiduciary duty, integrity, and transparency

## Governance

- Identify core principals of the Board such as integrity and transparency
- Discuss delegation to the Executive Director, CIO and staff
- Require an annual review of investment policy statement

# Most Critical Elements of Investment Policy

---

- Among the various elements of policy we just outlined, the 5 below strike us as most critical for the Board to review and be comfortable with as we move forward with the review
  1. Asset Allocation and Rebalancing
  2. Benchmarks
  3. Risk Management
  4. Monitoring and Reporting
  5. Governance/Delegation

# Industry Trends for Investment Policies

---

- Delegation of authority for manager selection and termination (with limits on size expressed as percentage of Total Fund)
- Shift towards principals based policy over rules based policy
- Broader view of asset allocation and risk exposure
  - Defining return seeking versus risk reducing assets
  - Allocating hedge fund strategies to appropriate asset classes and objectives based hedge fund portfolios
- A belief statement embedded within the IPS or distinctly separate
  - Articulation of investment beliefs / investment philosophy
  - Potentially included as a part of the Statement of Purpose component of the IPS
- Development of an executive summary
- Continued evolution of risk management and oversight

# Individual Trustee Discussion

---

- AHIC will have a discussion with individual Board members to ask questions such as:
  - What would you like to understand better about investment policy, and the specific duties outlined?
  - Is there anything that you are uncomfortable with in the current policy?
  - Are there areas that you would like to change in the current policy?

## Next Steps and Work Underway

---

- Conduct individual trustee calls
- Develop Executive Summary– overview of investment program
- Review investment policy with AHIC for best practices and trends
- Centralize concepts of individual asset class Guidelines and Procedures within the main body of the investment policy to reduce redundancy and make more concise
- Improve the readability of the IPS while maintaining thorough level of detail

**Propose a revised investment policy for consideration at the May 2018 Joint Meeting of the Board of Trustees and Investment Advisory Committee**

# Legal Disclosures and Disclaimers

---

Investment advice and consulting services provided by Aon Hewitt Investment Consulting, Inc. (“AHIC”). The information contained herein is given as of the date hereof and does not purport to give information as of any other date. The delivery at any time shall not, under any circumstances, create any implication that there has been a change in the information set forth herein since the date hereof or any obligation to update or provide amendments hereto.

This document is not intended to provide, and shall not be relied upon for, accounting, legal or tax advice or investment recommendations. Any accounting, legal, or taxation position described in this presentation is a general statement and shall only be used as a guide. It does not constitute accounting, legal, and tax advice and is based on AHIC’s understanding of current laws and interpretation.

This document is intended for general information purposes only and should not be construed as advice or opinions on any specific facts or circumstances. The comments in this summary are based upon AHIC’s preliminary analysis of publicly available information. The content of this document is made available on an “as is” basis, without warranty of any kind. AHIC disclaims any legal liability to any person or organization for loss or damage caused by or resulting from any reliance placed on that content. AHIC reserves all rights to the content of this document. No part of this document may be reproduced, stored, or transmitted by any means without the express written consent of AHIC.

The opinions referenced are as of the date of publication and are subject to change due to changes in the market or economic conditions and may not necessarily come to pass. Information contained herein is for informational purposes only and should not be considered investment advice.

Aon Hewitt Investment Consulting, Inc. is a federally registered investment advisor with the U.S. Securities and Exchange Commission. AHIC is also registered with the Commodity Futures Trade Commission as a commodity pool operator and a commodity trading advisor, and is a member of the National Futures Association. The AHIC ADV Form Part 2A disclosure statement is available upon written request to:

Aon Hewitt Investment Consulting, Inc.  
200 E. Randolph Street  
Suite 1500  
Chicago, IL 60601  
ATTN: AHIC Compliance Officer

© Aon plc 2016. All rights reserved.

Questions?





## Public Agenda Item #7

### *Global Public Equity Program:*

### *7.1 Global Public Equity Program Overview, Proxy Voting and Market Update*



March 7, 2018

John Streun, MS, CFA, CPA, Director of Global Public Equity

Chris Tocci, CFA, Deputy Director of Global Public Equity

Sharmila Kassam, CPA, Deputy Chief Investment Officer

Michael Clements, CMT, Chief Equity Trader

# Global Public Equity Program



## *Agenda*

- Investment Objective and Global Public Equity Team Update
- 2017 in Review – A Better Year for Active Management
- Portfolio Structure and Positioning
- External Advisor Program Update
- Trading Update
- Proxy Voting
- Global Public Equity Initiatives for 2018

# Global Public Equity Program

## *Investment Objective & Strategy*



- **Investment Objective** – Outperform the Global Public Equity benchmark over rolling five-year periods, while maintaining compliance with the active risk budget.
- **Investment Strategy** – Combine lower risk internal strategies with higher risk external strategies to produce a stable excess return with a target tracking error of 150 basis points and an excess return ratio of 25 basis points or better.

# 2017 Asset Class Performance Highlights



- Strong absolute returns of 25.3% for Calendar Year 2017.
- Strong relative outperformance of 98 basis points.
- 11 out of 12 internal portfolios outperformed their benchmarks.
- 9 out of 10 external portfolios outperformed their benchmarks.
- Positive stock selection from both internal and external portfolios drove most of the relative outperformance.
- Overweights to international markets and Information Technology also contributed.
- An overweight to U.S. small cap detracted from performance.
- Cash drag detracted from performance.

# Global Public Equity Program

## *Changes Made in Calendar Year 2017*



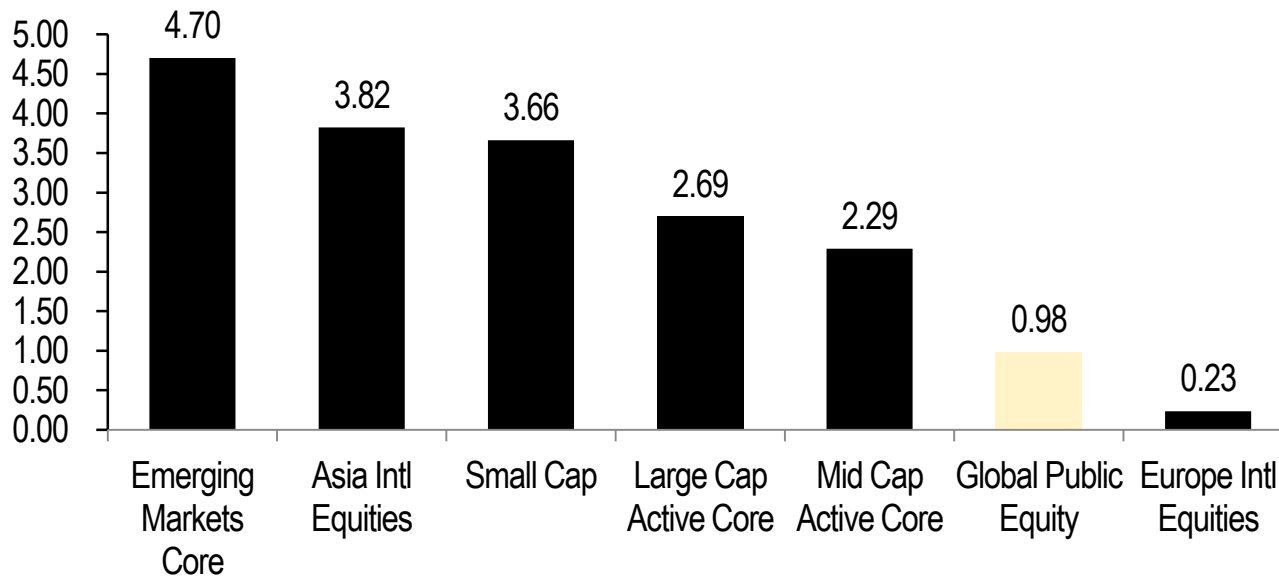
- Altered Risk Levels in Various Portfolios
- Neutralized Sector Positioning in Select Sectors
- Integrated Quantitative Scores into Fundamental Analysis
- Improved Sell Discipline
- Changed Analyst Industry Coverage on Certain Portfolios

# Global Public Equity Program

## 2017 Internal Portfolio Relative Performance



**Internal Portfolios Relative Performance as of 12/31/2017**

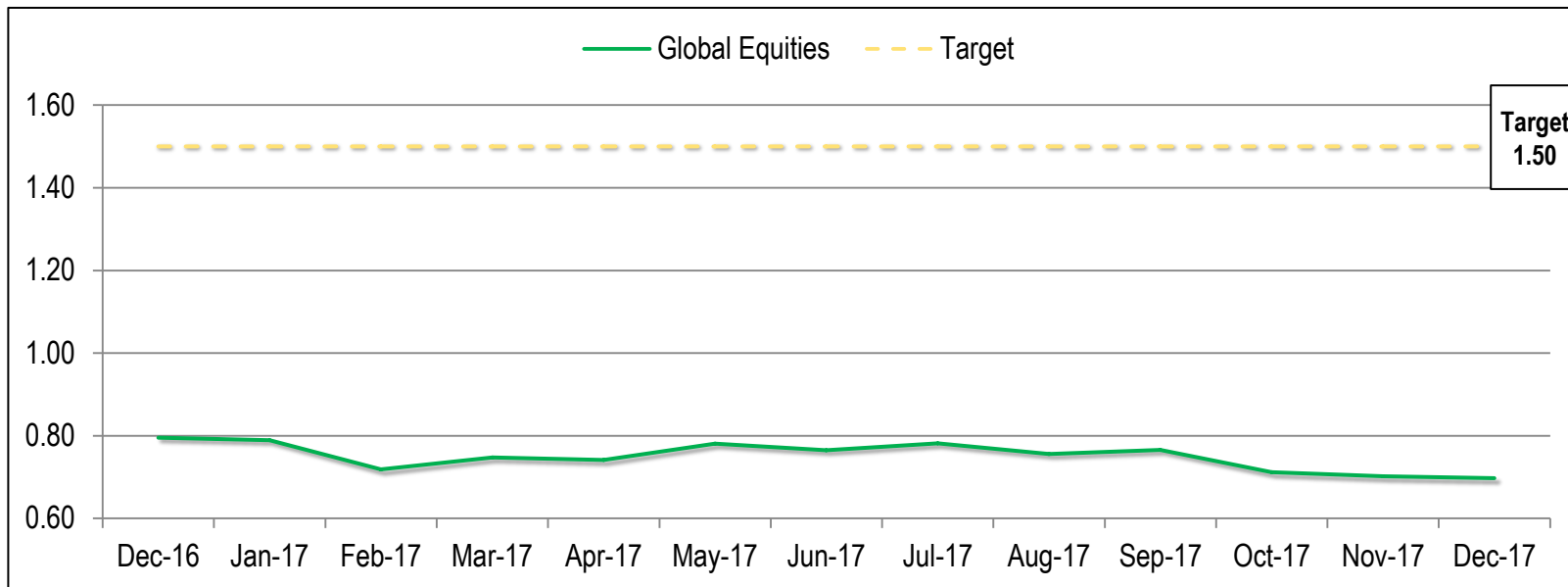


# Global Public Equity Program

## Active Risk/Tracking Error



- Forecast risk levels remained within policy limits



# Global Public Equity Program

## Public Equity Team



### Public Equity Team

**Leadership: John Streun, Chris Tocci, Andrew Hodson, Tim Reynolds, Michael Clements**

### Domestic Portfolio Managers

<u>S&amp;P 500</u>	<u>Large Cap Active</u>	<u>Large Cap Growth</u>	<u>Mid Cap</u>	<u>Small Cap</u>
Bob Wood MBA, CFA (28)	Kelley Hewell MBA, CFA (25)	Kelley Hewell MBA, CFA (25)	Andrew Hodson MBA, CFA (16)	Brent Clukey MBA, CFA (22)

### International Portfolio Managers:

<u>Europe</u>	<u>Asia</u>	<u>Emerging Markets</u>	<u>Canada</u>
Chris Tocci CFA (26)	Keith Lyons MBA (14)	Tim Reynolds MS, CFA, CAIA (26)	Stuart Williams MBA, CFA (27)

### Quantitative

Stuart Williams, MBA, CFA (27)  
Kelley Hewell, MBA, CFA (25)  
John McCaffrey, MBA (3)

### Trading

Michael Clements, CMT (20)  
Rob Newhall (5)

*(years of industry experience)*

### External Advisor Team

Shar Kassam, CPA, JD (14)  
Lauren Honza, MBA, CFA (24)  
Michael McCrary, MBA (17)  
Travis Olson, CPA (3)



# Global Public Equity Program

## Public Equity Team



### Public Equity Structure

#### Industrials & Materials

John Streun, MS, CFA, CPA (25)

Keith Lyons, MBA (14)

Paul Knight, CFA (16)

Teofilo Bacungan, MBA, CFA (17)

Nancy McCarthy, MBA, CFA (10)

#### Technology & Telecom

Brent Clukey, MBA, CFA (22)

Chris Tocci, CFA (26)

John Taylor, MBA, CFA (11)

Flavia de la Fuente, MBA (4)

Jake Tisinger, CFA (9)

#### Consumer

Bob Wood, MBA, CFA (28)

Andrew Hodson, MBA, CFA (16)

Mark Long, MBA, CFA (21)

June Kim (11)

#### Financial Services

Kelley Hewell, MBA, CFA (25)

Tim Reynolds, MS, CFA, CAIA (26)

Scott Hodgson, MS, CFA (14)

#### Health Care

Stuart Williams, MBA, CFA (27)

Micheal Yuan, CFA (20)

#### Energy

Ben Schuman, CFA (12)

# ERS Global Public Equity

*2017 in Review – A Better Year for Active Management*

---



March 7, 2018

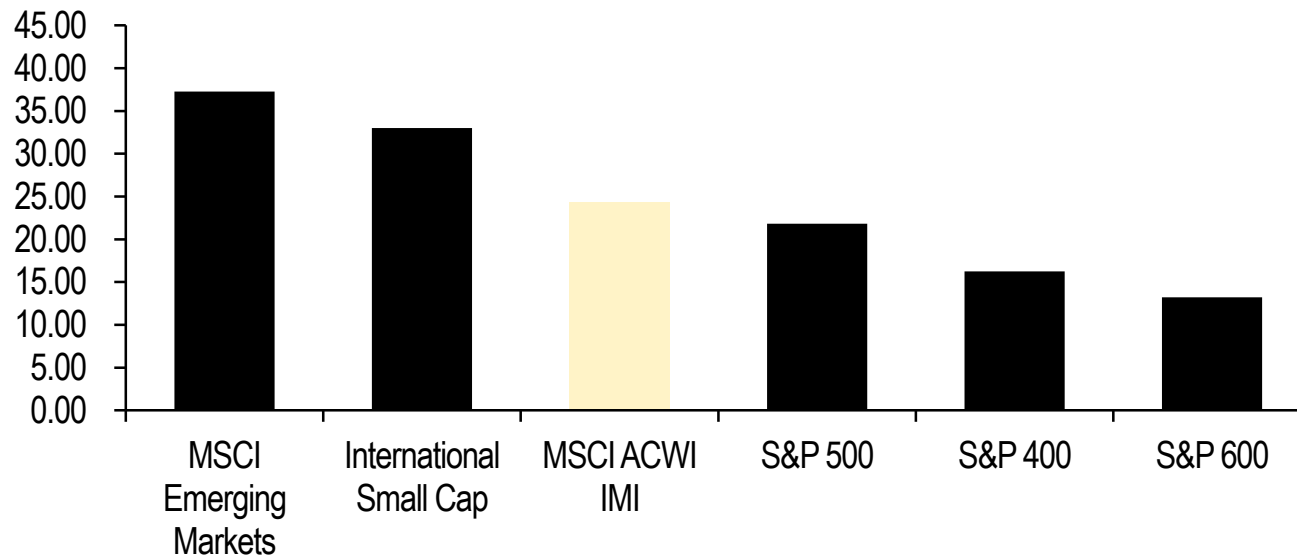
John Streun, MS, CFA, CPA, Director of Global Public Equity

# Global Public Equity Program

## 2017 Total Return Performance by Asset Class



**2017 Total Return Performance by Asset Class**



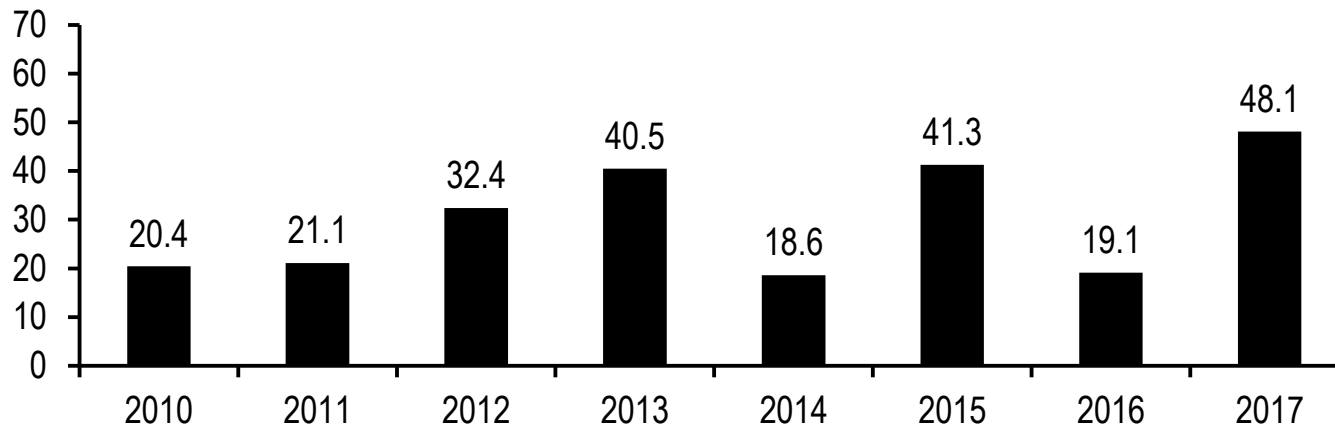
Source: Bloomberg Index Ranked Returns as of 12/31/2017

# Global Public Equity Program



## Large Cap Managers Outperforming Benchmark by Year

**% of large cap mutual funds outperforming the benchmark\* by year, 2010-2017**



Source: Lipper, BofA Merrill Lynch US Equity & US Quant Strategy

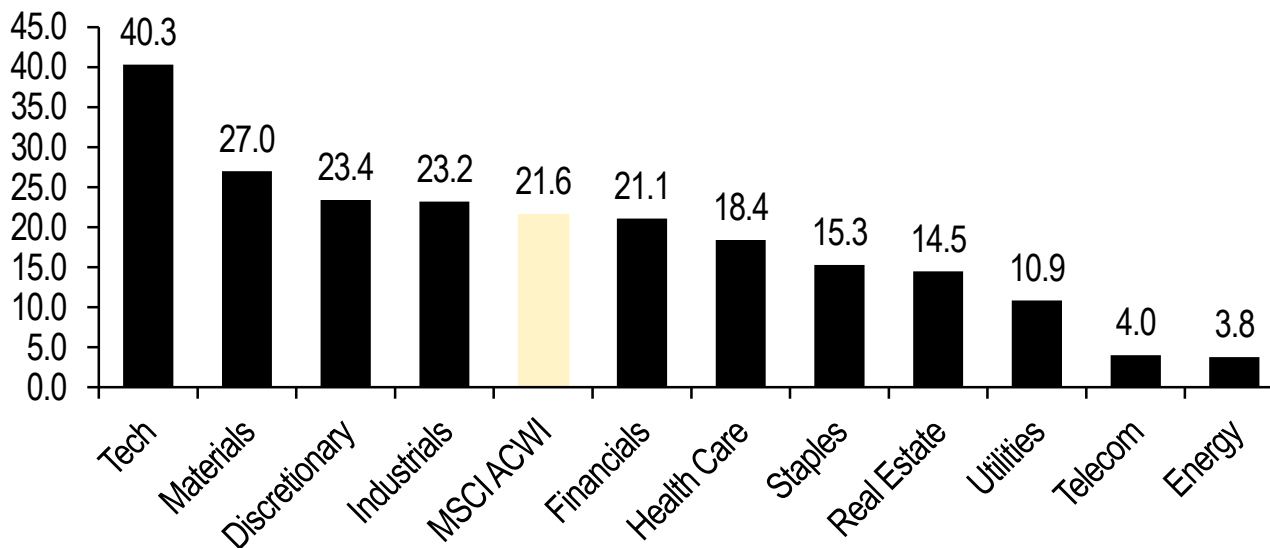
\*% of funds outperforming the benchmark is based on Russell 1000 benchmark for all funds prior to 2015 and the fund's respective benchmark (R1000 for Core funds, R1000 Value for Value funds and R1000 Growth for Growth funds) in 2015 and onward.

# Global Public Equity Program

## 2017 MSCI ACWI Price Returns by Sector



**Absolute Price Returns by MSCI ACWI Sector**



Source: Bloomberg Index Ranked Returns

# ERS Global Public Equity

## *Portfolio Structure and Positioning*



March 7, 2018

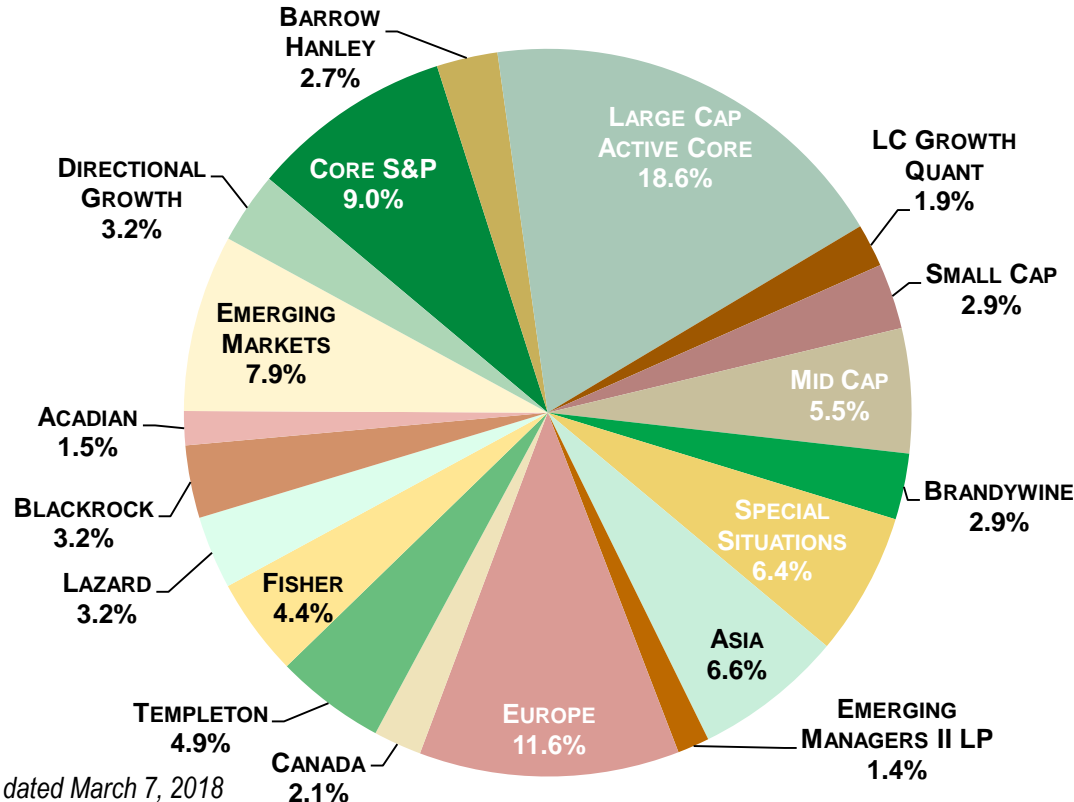
Chris Tocci, CFA, Deputy Director of Global Public Equity

# Global Public Equity Program

Global Portfolio Structure – Dollar Allocation -12/31 2017



**\$14 Billion**  
**49% of Trust**

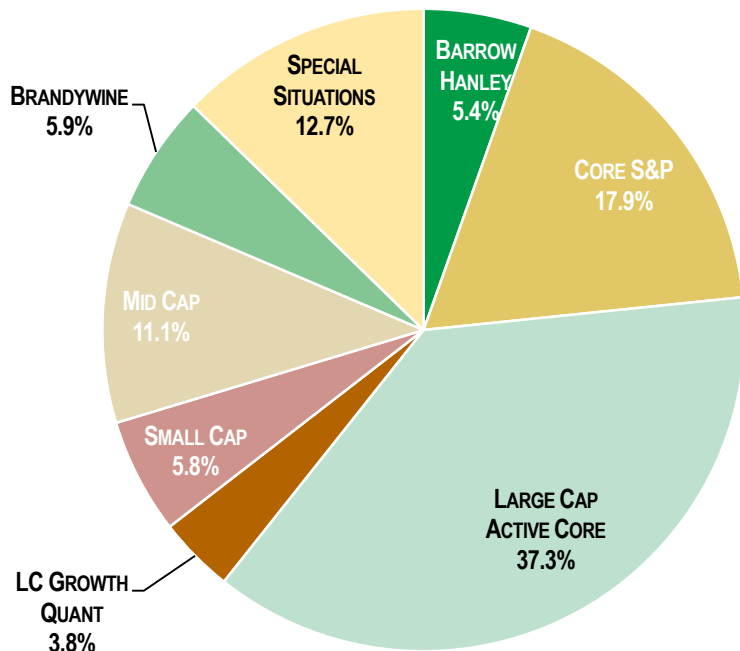


# Global Public Equity Program

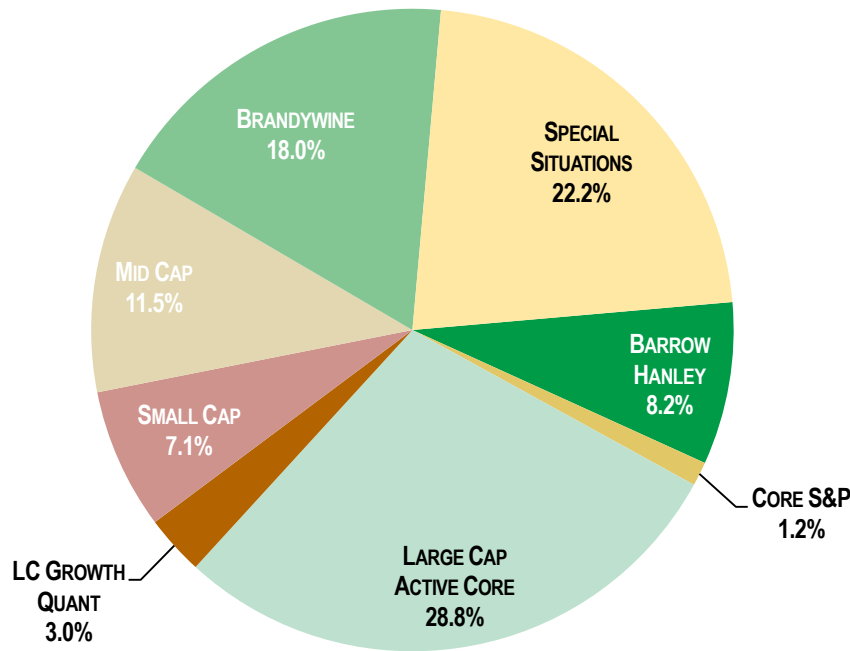
## Portfolio Structure and Positioning - Domestic Equity



**Dollar Allocation (12/31/2017)**



**Contribution to Tracking Error (12/31/2017)**



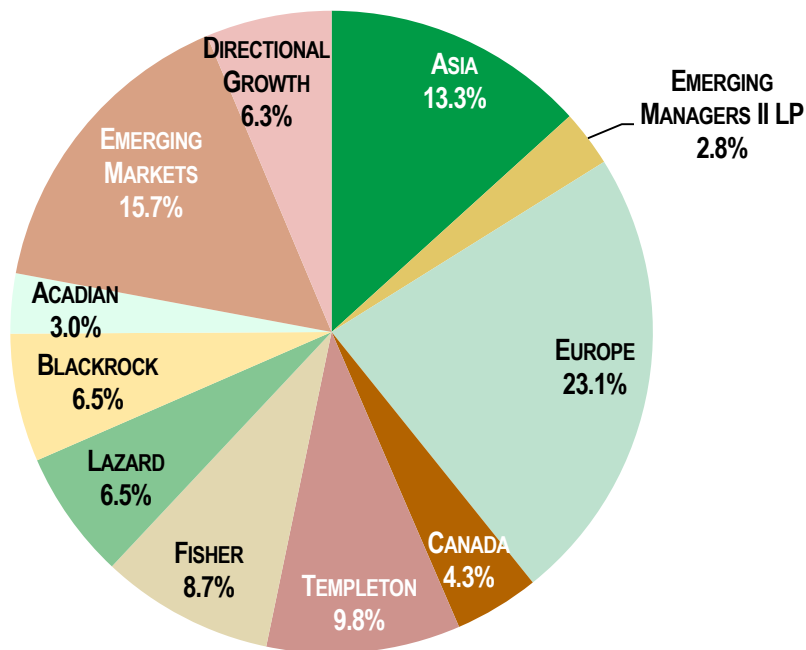


# Global Public Equity Program

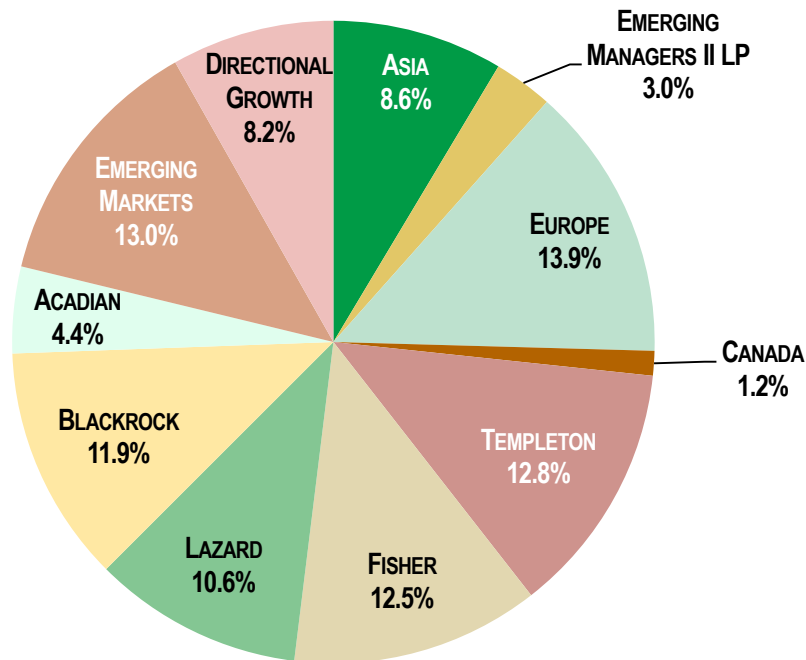
## Portfolio Structure and Positioning - International Equity



**Dollar Allocation (12/31/2017)**



**Contribution to Tracking Error (12/31/2017)**



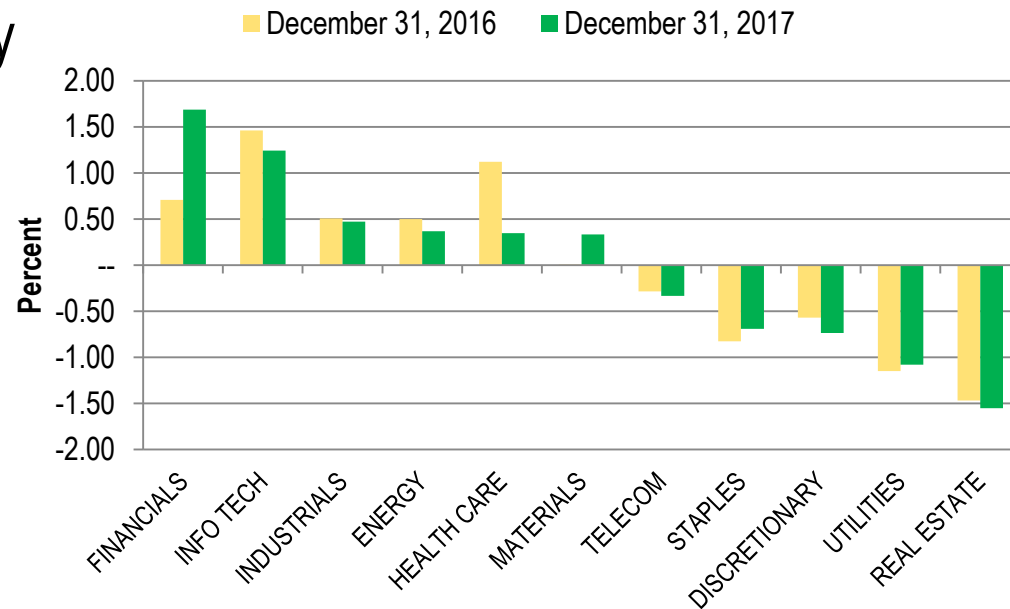
# Global Public Equity Program

## Portfolio Structure and Positioning - Sector Exposures



- Health Care overweight decreased significantly, offset by an increase in Financials
- Materials increased to a slight overweight position for the first time in several years
- Information Technology overweight decreased slightly

Portfolio Position vs. MSCI ACWI IMI by Sector

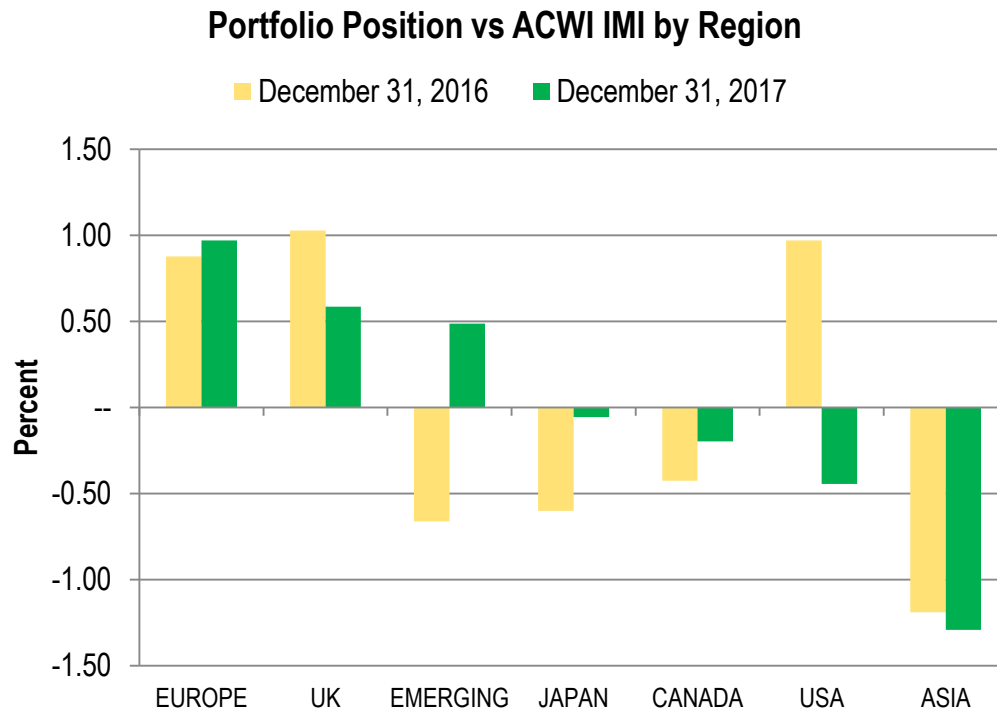


# Global Public Equity Program



## *Portfolio Structure and Positioning - Regional Exposures*

- Consensus underweight of Asia remained in place while Japan continued to move toward neutral
- USA moved from a significant overweight position to underweight as capital was redeployed to Japan and Emerging Markets
- UK while still overweight was also a source of funds for Emerging Markets and Japan

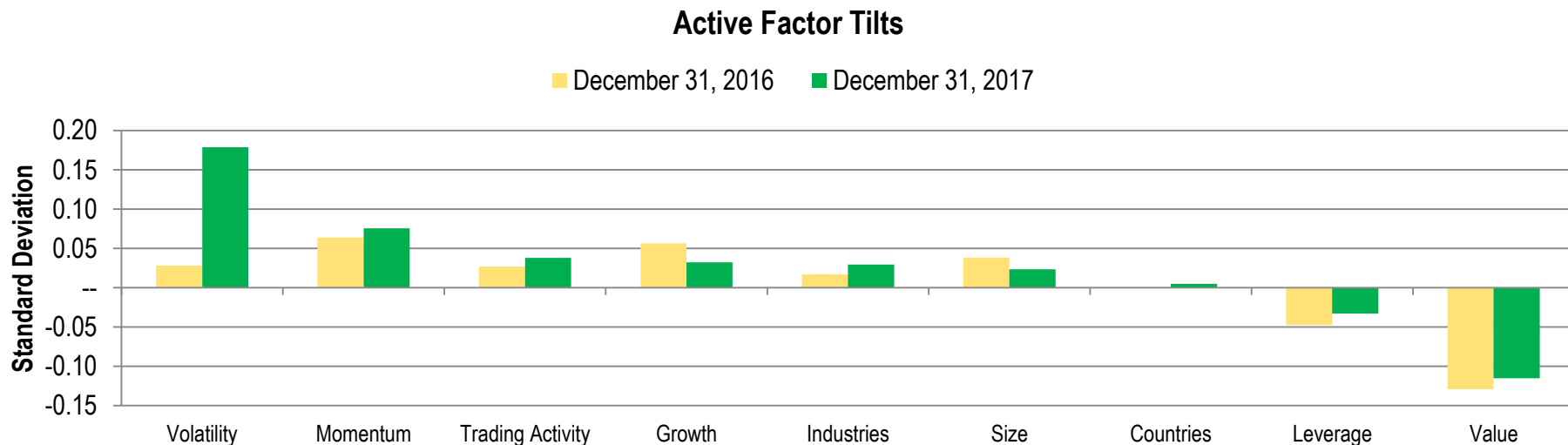


# Global Public Equity Program

## Factor Exposures (Portfolio Characteristics)



- Factor tilts remain small at the asset class level
- Increased exposure to volatility due to Financials and Materials



# Global Public Equity Program

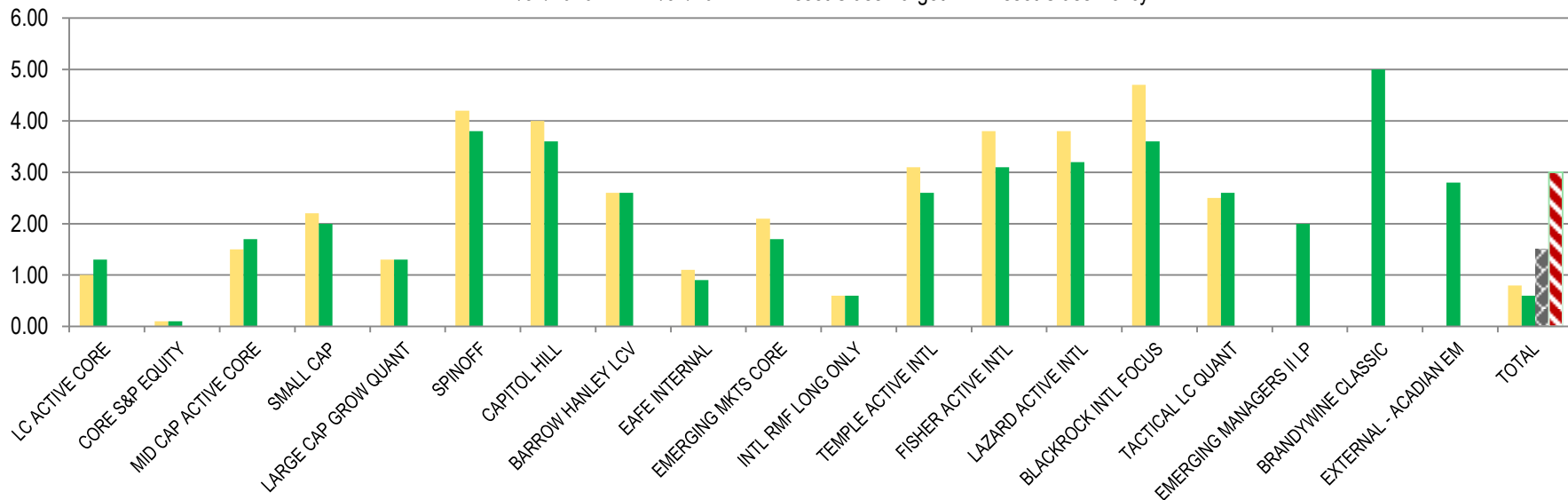


## Active Risk/Tracking Error

- Forecast risk levels remained within policy limits

### Forecasted Tracking Error - Historical Comparison

12/31/2016 12/31/2017 Asset Class Target Asset Class Policy



# ERS Global Public Equity

## *Review and Discussion of Global Public Equity External Advisor Program*



March 7, 2018

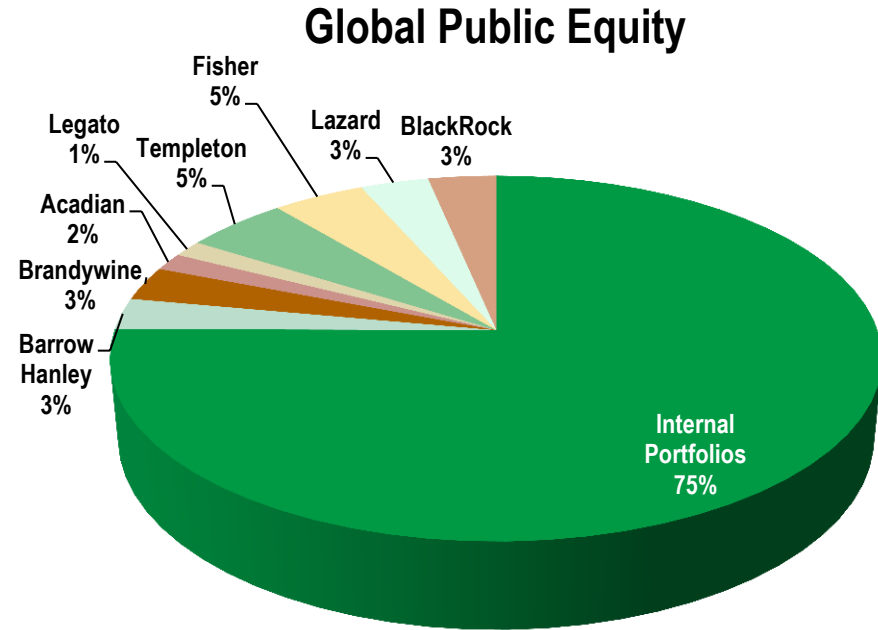
Sharmila Kassam, CPA, Deputy Chief Investment Officer

# External Advisor Program

## Objectives



- Complement internal management
- Expand opportunity set
- Seeking active managers with differentiated and opportunistic strategies
- 75% internally managed; 25% externally advised



# External Advisor Program

## *Global Public Equity External Advisor Team*



### Sharmila Kassam Deputy CIO

- BBA, University of Texas
- JD, University of Texas
- CPA
- 14+ Years Investments Experience / Securities Law
- 7+ Years Operational/Management Experience
- 10 Years at ERS

### Lauren Honza Portfolio Manager

- BS, University of Texas
- MBA, University of Texas
- CFA Charterholder
- 24+ Years Investments Experience
- 8 Years at ERS

### Mike McCrary Investment Analyst

- BBA, Texas Tech University
- MBA, Southern Methodist University
- 19+ Years Investments Experience
- 4+ Years at ERS

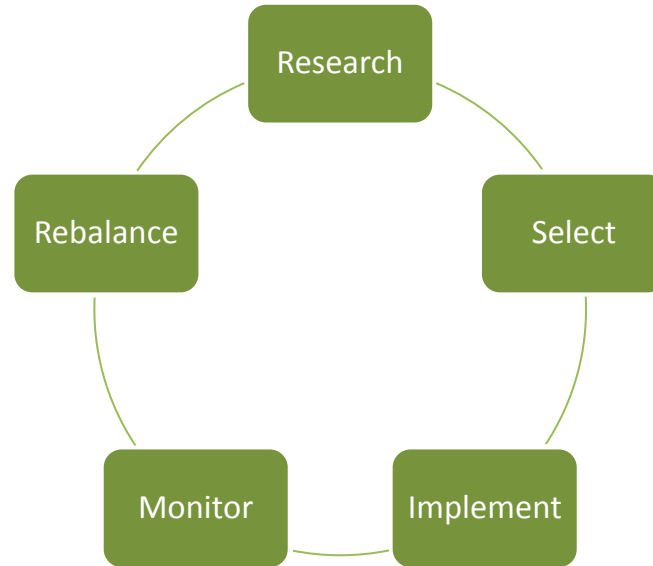
### Travis Olson Investment Analyst

- BBA, St. Edward's University
- CPA
- 3+ Years Investments Experience
- 6 Years at ERS



# External Advisor Program

## *Investment Process*



# External Advisor Program

## *Review of 2017*



- Funded Legato Capital Management (Manager of Emerging Managers)
  - International Small Cap mandate with inception date of 02/01/17
- Funded Brandywine Global Investment Management
  - Global Classic Large Cap Value strategy with inception date of 04/01/17
- Funded Acadian Asset Management
  - Emerging Markets Equity strategy with inception date of 11/01/17
- Launched International Small Cap RFP 10/04/17

# External Advisor Program

## *External Advisors (Funded)*



	Strategy	Selection Date	Portfolio Inception	Funded Status as of 12/31/2017	Monitoring Status
Acadian Assset Management	Emerging Markets	12/2/2011	11/0117	Funded	Good
Barrow , Hanley, Mew hinney & Strauss	Large Cap Value	12/2/2010	4/1/2011	Funded	Good
BlackRock	International	12/2/2011	3/1/2015	Funded	Good
Brandywine GIM	Large Cap Value	12/2/2010	4/1/2017	Funded	Good
Fisher Investments	International	1/24/2006	7/1/2008	Funded	Good
Lazard Asset Management	International	8/23/2011	12/1/2011	Funded	Good
Templeton	International	11/19/2002	4/1/2003	Funded	Good
Legato Capital Management	International Small Cap	5/25/2010	2/1/2017	Funded	Good

\*Note: Excludes Hedge Funds in Directional Growth Portfolio

# External Advisor Program

*Brandywine/Large Cap Value Equity*



## **People**

- Patrick Kaser, portfolio manager, supported by a team of 5 analysts

## **Philosophy**

- Based on “value anomaly” where research is focused on stocks with low absolute and relative valuations

## **Process**

- Quantitative screen followed by deep fundamental analysis
- Macro factors can and will influence sector, industry, individual security weights

## **Performance (net of fees)**

- Outperformed the index by 287 basis points since inception

# External Advisor Program

*Acadian/Emerging Markets*



## **People**

- Portfolio managers assisted by staff of research, trading and data associates

## **Philosophy**

- Believes markets are inefficient, and that such inefficiencies are caused in part by behaviorally-based mispricing

## **Process**

- Objective, disciplined and systematic quantitative process that is designed to exploit mispricing

## **Performance**

- Outperformed the index by 268 basis points since inception

# External Advisor Program

## *Legato/International Small Cap Mandate*



### **Firm/People**

- The firm was founded in 2004 and is focused on manager of emerging manager mandates
- The Investment Committee consists of Victor Hymes, Adam Lawlor, and Eric Pollack

### **Philosophy**

- They believe the greatest stability of alpha can be achieved by combining high conviction investment managers whose approaches are diversified

### **Process**

- Integrate selection, asset allocation and risk management to deliver customized solutions to every client

### **Managers**

- |                            |                                 |
|----------------------------|---------------------------------|
| • Algert Global            | Global Alpha Capital Management |
| • Ativo Capital Management | Kabouter Management             |

# ERS Global Public Equity

## *Trading Update*

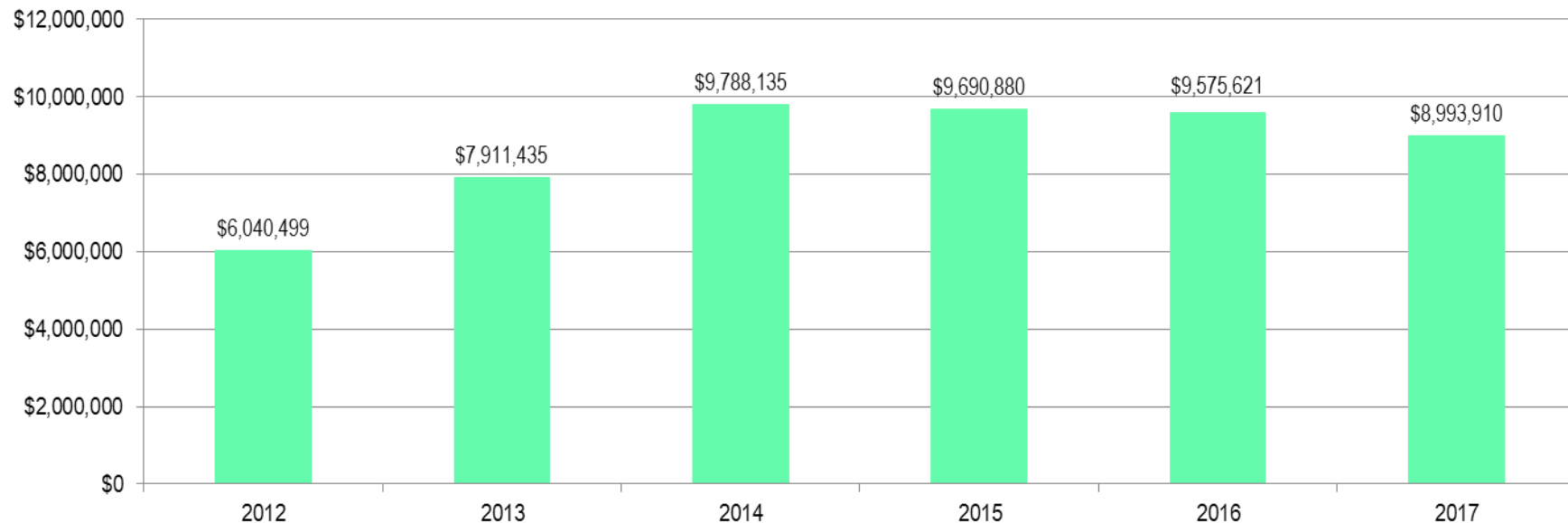


March 7, 2018

Michael Clements, CMT, Chief Equity Trader

# Global Public Equity Program

## Total Commissions

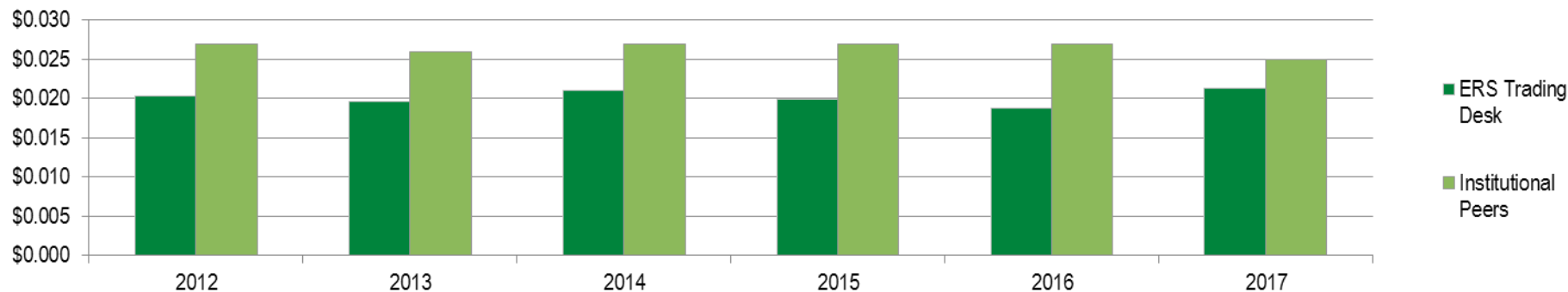


Calendar year 2017 ERS Trading commissions were 6% less than 2016.



# Global Public Equity Program

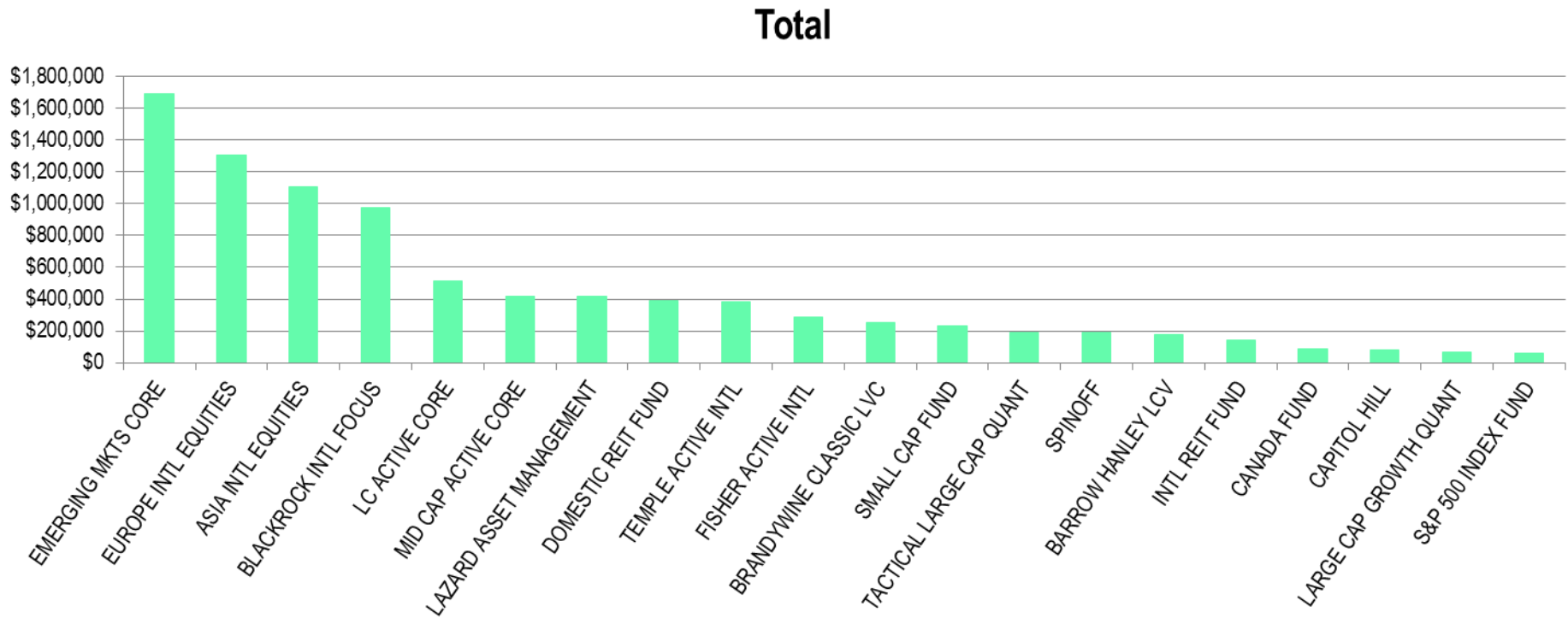
*The average “All-In” blended commission rates*



- Average “all-in” blended commission rate paid by U.S. institutions to brokers on domestic shares was 2.5 cents-per-share, down from 2.7 cents-per-share in 2016.
  - This average rate takes into account commissions on single-stock, program, and direct-market-access electronic trades.
- ERS’ average commission was 2.1 cents-per-share, up from 1.9 cents-per-share in 2016.

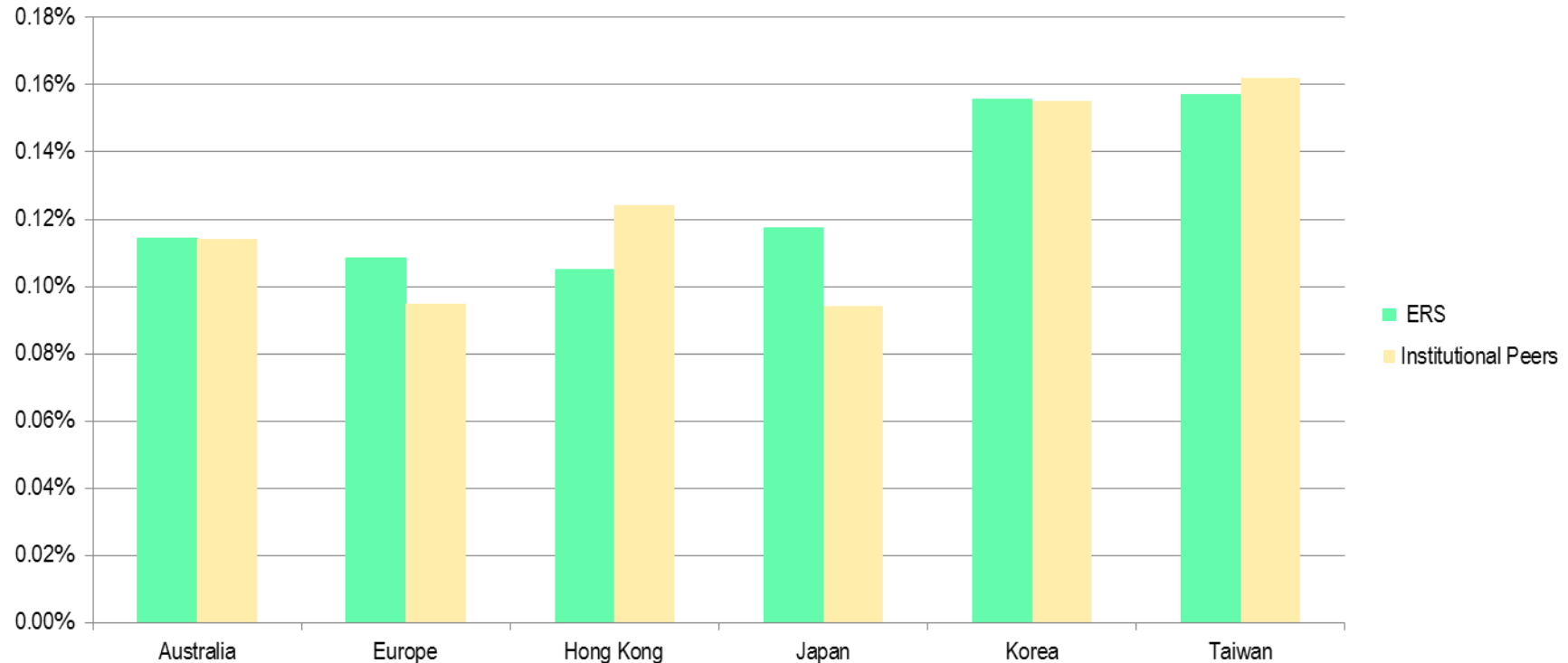
# Global Public Equity Program

## Commission by Portfolio



# Global Public Equity Program

## *International Commission Rates*



# ERS Global Public Equity

## *Proxy Voting*



March 7, 2018

John Streun, MS, CFA, CPA, Director of Global Public Equity

# ERS Proxy Voting

## *Background & Process*



- **The ERS Board of Trustees recognizes that the right to vote proxies:**
  - Has economic value and includes the management of voting rights as fiduciaries
  - Must be exercised for the sole economic benefit of ERS
- **Proxies are voted through Institutional Shareholder Services' (ISS) electronic proxy voting system**
  - Rules based on guidelines defined by staff within scope of policy
  - Most votes are automatic based on rules with case-by-case referred back to ERS Staff
  - During 2017, 0.7% of all proposals were referred to ERS Staff

# ERS Proxy Voting

## 2017 Activity



### ERS Proxy Voting Results 01/01/17 – 12/31/17

Agenda Item Category	Total Votable Proposals 2016	% of Time Voted With Management 2017	% of Time Voted With Management 2016
Routine/Miscellaneous	3,601	97%	96%
Board of Directors	13,444	94%	95%
Shareholder Rights and Defenses	201	87%	90%
Capitalization	1,337	88%	87%
Reorganizations, M&A	296	93%	94%
Compensation	3,104	88%	87%
Social/Environmental Issues	116	92%	73%
Other Shareholder Proposals	574	37%	57%
Preferred/Bondholder	9	0%	100%
<b>Total</b>	<b>22,682</b>	<b>92%</b>	<b>93%</b>

# ERS Proxy Voting

## *Internal Initiative*



- Opportunity to improve quality of corporate governance and capital stewardship in Japanese equity markets.
- ERS Public Equity analysts engaging in written and oral correspondence with Japanese corporates on improving governance, with a focus on:
  - Raising return on equity
  - Board independence
  - Stewardship code

# ERS Global Public Equity

## *Goals and Objectives for 2018*



March 7, 2018

John Streun, MS, CFA, CPA, Director of Global Public Equity



# Global Public Equity Program

## *Initiatives for 2018*



- Active due diligence with the hedge fund team on a dedicated external, Japan-focused manager.
- Staff also plans to study other targeted regional allocations in emerging markets.
- Best Ideas Committee will consider a new international, quantitative strategy.
- RFP for international small cap managers issued October 2017.
- Internal Asset Class Investment Committee considering options extension strategy.
- Continue to incorporate more quantitative processes into all portfolios.

Questions?



## Public Agenda Item #7.2

### *Proposed Revisions to the Global Public Equity Guidelines and Procedures – (Action)*



March 7, 2018

Sharmila Kassam, CPA, JD, Deputy Chief Investment Officer

John Streun, MS, CFA, CPA, Director of Global Public Equity

# ERS Investment Policy

## *Background*



- ✓ In accordance with Section 2.3 of the ERS *Investment Policy*, staff will recommend changes as needed to the Investment Advisory Committee (IAC) and Board of Trustees.
- ✓ Staff has proposed minor revisions to the Global Public Equity Guidelines and Procedures

# ERS Investment Policy

## *Proposed Tactical Plan*



- ✓ Update of Appendix A to Global Public Equity Guidelines and Procedures for Tactical Plan
  
- ✓ Refresh Current Select Pool with Additional Searches in Calendar Year 2018
  - International Small Cap
  - Emerging Markets
  - Other Focused International Strategies

Questions?  
**Action Item**



## Public Agenda Item #8.1

### *Review and Discussion of Private Infrastructure Program: 8.1 Market Update and Program Overview*



March 7, 2018

Pablo de la Sierra Perez, Director of Infrastructure and Natural Resources

Ryan Wilkinson, Real Assets Associate

Jay Yoder, CFA, Managing Director, Pavilion Alternatives Group

Philip Cote, CFA, Associate Director, Pavilion Alternatives Group

# Private Infrastructure Program Overview



## *Agenda - Key Topics*

- Team Update
- Portfolio Update as of December 31, 2017
- Market Update
- Goals and Objectives for FY2018 – FY2019
- Long Term Goals and Objectives
- Infrastructure Consultant



# Private Infrastructure Program Overview

## Team Update



### Pablo De La Sierra Pérez

Director of Infrastructure and Natural Resources

- Infrastructure specialist
- Joined ERS August 2014
- Background in direct investing and engineering
- MS Ind. Engineering from Universidad De Oviedo

### Ryan Wilkinson

Real Assets Investment Associate

- Joined ERS February 2017
- 7 years experience
- Cintra US
- Infrastructure investment analysis
- BS Economics, MS Finance
- Real Assets focused

# Private Infrastructure Program Overview

*Portfolio Update as of December 31, 2017*



- Inception through December 31, 2017: 10 Funds, 13 co-investments, **\$1,013 million committed**
- **Net Asset Value (“NAV”) of \$509.5 million or 1.8% of system assets**
  - Includes 3 legacy Special-Situation investments
  - 0.94x TVPI<sup>1</sup>, 0.15x DPI<sup>1</sup>, -3.00 % IRR
- FY2017: committed approximately \$350 million
- FY2018: \$138 million already committed; \$250 - \$300 million future investments

---

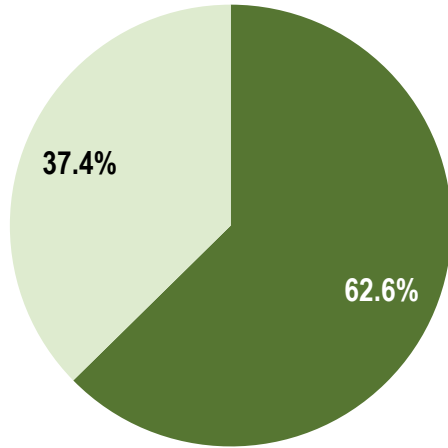
1. TVPI, or Total Value to Paid in Capital, is equal to (NAV + Distributions) / Paid in Capital;  
DPI, or Distributed to Paid in Capital, is equal to Distributions / Paid in Capital

# Private Infrastructure Program Overview



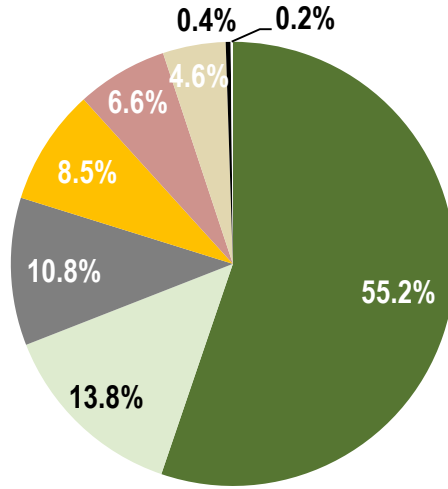
*Portfolio Update as of December 31, 2017*

**Geography<sup>1</sup>**



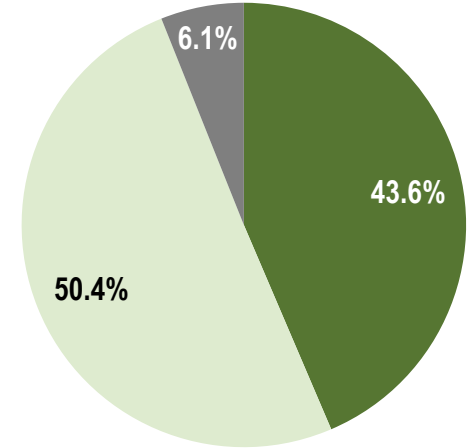
■ Developed Economies  
■ Emerging Markets

**Sector<sup>1</sup>**



■ Power  
■ Utilities  
■ Water  
■ Telecom  
■ Transportation  
■ Social  
■ Midstream  
■ Shipping

**Strategy<sup>1</sup>**



■ Opportunistic  
■ Value-Add  
■ Core

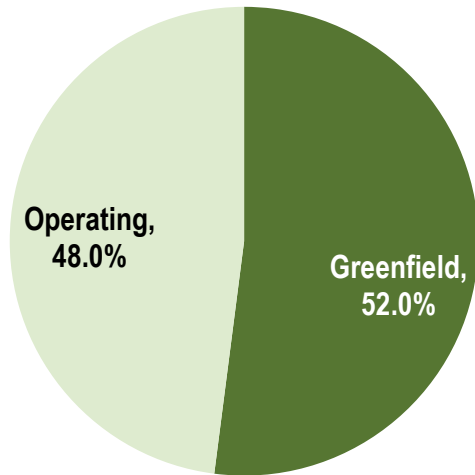
1 – Based on NAV

# Private Infrastructure Program Overview

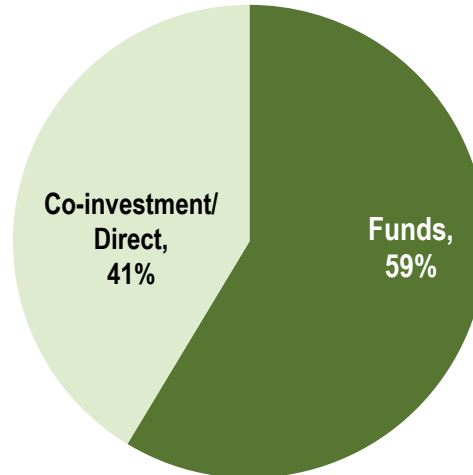


*Portfolio Update as of December 31, 2017*

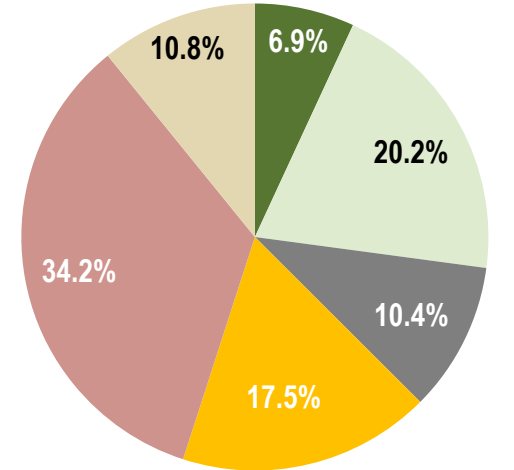
**New Construction vs. Operating<sup>1</sup>**



**Vehicle<sup>1</sup>**



**Vintage<sup>1</sup>**



■ FY 2012 ■ FY 2013 ■ FY 2015  
■ FY 2016 ■ FY 2017 ■ FY 2018

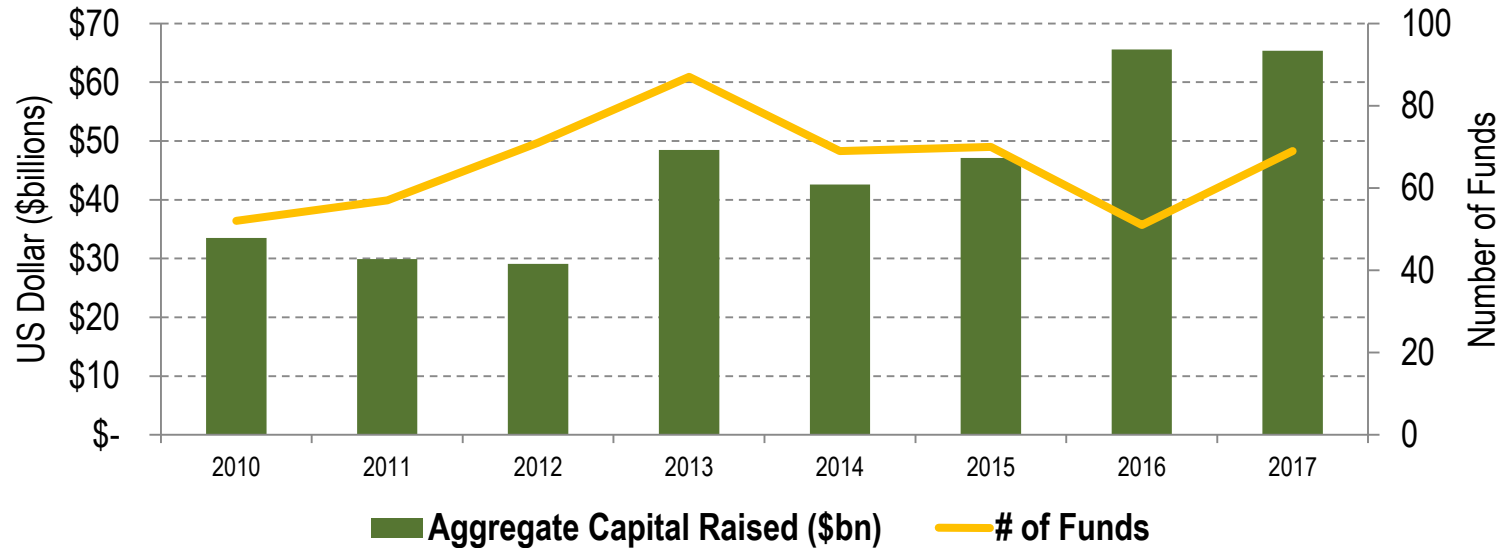
<sup>1</sup> – Based on Committed Capital

# Private Infrastructure Program Overview

## Market Update



Fundraising level continues to be strong.



Source: 2018 Preqin Global Real Assets Spotlight

# Private Infrastructure Program Overview



## *Market Update*

- Energy, Power and Utilities remain largest subsectors
  - Midstream, renewables
- Expanding private infrastructure universe:
  - Telecommunication
  - Battery / Distributed Energy
- New construction (Greenfield) and upgrades to existing infrastructure
- Industrial / strategic players
- Direct investments / co-investments

# Private Infrastructure Program Overview



## *Market Update - Outlook*

- Strong need for global infrastructure investment
- Developing asset class
  - Standardization and market information
- Strong fundraising activity
- Evolution of traditional Private Equity-style fund investment model
- Maturing technologies – opportunities:
  - Power supply
  - Transport-related
- Political environment – opportunities:
  - Renewable energy
  - Privatization

# Private Infrastructure Program Overview

## *Goals and Objectives for FY2018 - FY2019*



- Continue pursuing direct investments and co-investments
- Seek to diversify portfolio
- Seek to pool and manage capital with other investors
- Seek to enhance operational flexibility
- Execute Tactical Plan
- Hire one analyst

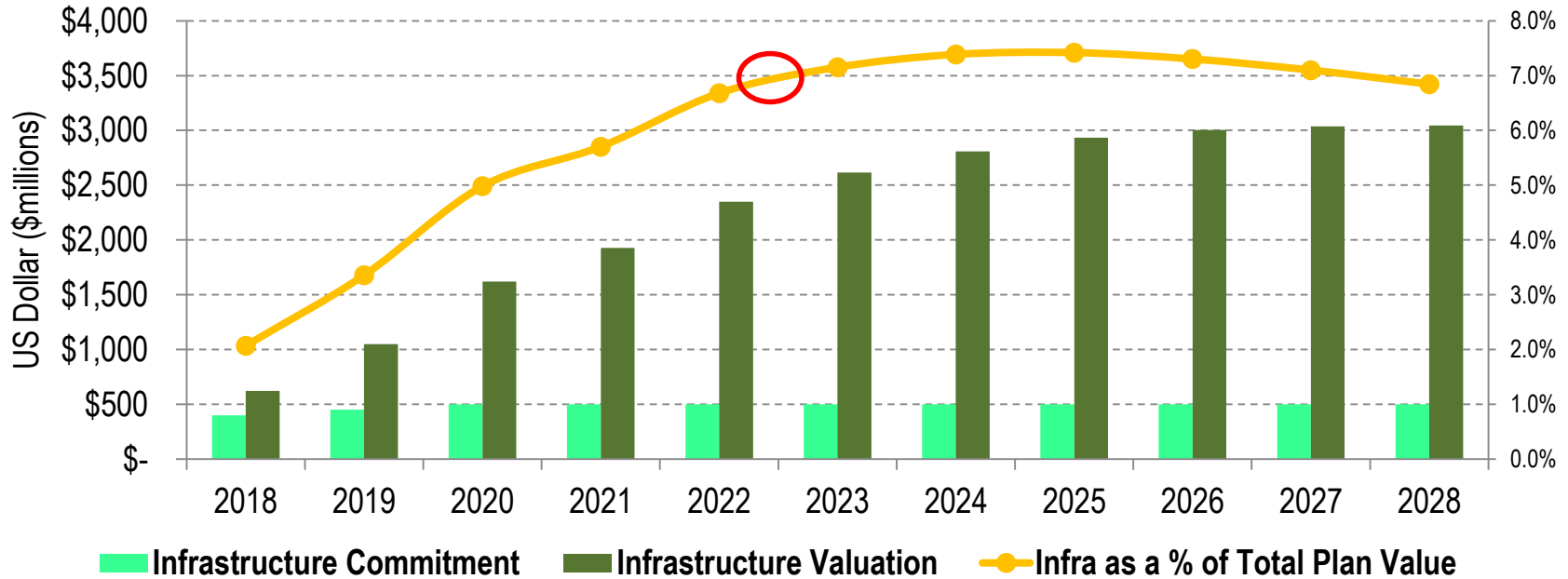


# Private Infrastructure Program Overview



## Long Term Goals and Objectives

Reaching allocation in 2023



# Private Infrastructure Program Overview

## *Infrastructure Consultant Performance*



- Frequent calls with staff/in-person meetings
- Annual on-site visit at consultant office in June 2017
- Regular reporting
- Investment Recommendations for deals
- Participated in Internal Investment Committee Meetings
- Staff reviewed Guidelines and Procedures with consultant
  - Proposed changes

Questions?



Employees Retirement System of Texas

## Private Infrastructure Program Review & Market Outlook 2018



March 7, 2018

# Attending Today



- Jay Yoder, CFA
  - *Managing Director, Head of Real Assets, Richmond office*
  
- Phil Cote, CFA
  - *Associate Director, Montreal office*

- *Agenda item 8.1 - Meeting book dated March 7, 2018*



# Agenda



- I. Pavilion Alternatives Group Update
- II. ERS Private Infrastructure Program Update
- III. Private Infrastructure Overview
- IV. Outlook, Challenges, and Recommendations

- *Agenda item 8.1 - Meeting book dated March 7, 2018*



I:

## Pavilion Alternatives Group Update



# Pavilion Financial Corporation



*Broad platform of diverse resources provides deep experience and knowledge-sharing*

## Pavilion Financial Corporation

*An employee-owned firm with approximately 290 employees serving institutional and other investors through the business lines described below*

### Global Investment Consulting and Research

### Global Markets

#### Pavilion Advisory Group®

##### Traditional Consulting

- Defined Contribution
- Defined Benefit
- Health Care
- Insurance
- Foundations
- Endowments

##### Implemented Solutions

- Wealth Management
- Discretionary Advisory Solutions

#### Pavilion Alternatives Group™

##### Alternative Assets

- Private Equity
- Private Credit
- Real Assets
- Hedge Funds
- Co-Investments

#### Pavilion Global Markets

- Macro Research
- Transition Management
- Agency-Only Trading

Pavilion Alternatives Group ("Pavilion") is a trademark of Pavilion Financial Corporation used under license by Pavilion Alternatives Group, LLC in the U.S., Pavilion Alternatives Group Limited in the UK, Pavilion Alternatives Group (Singapore) Pte. Ltd. in Singapore, and Pavilion Advisory Group Ltd. in Canada.

Pavilion Advisory Group is a registered trademark of Pavilion Financial Corporation, used under licence by Pavilion Advisory Group Ltd. in Canada and Pavilion Advisory Group Inc. in the United States.



- Agenda item 8.1 - Meeting book dated March 7, 2018



II:

## ERS Private Infrastructure Program Update



PAVILION

# Private Infrastructure

## Portfolio Snapshot



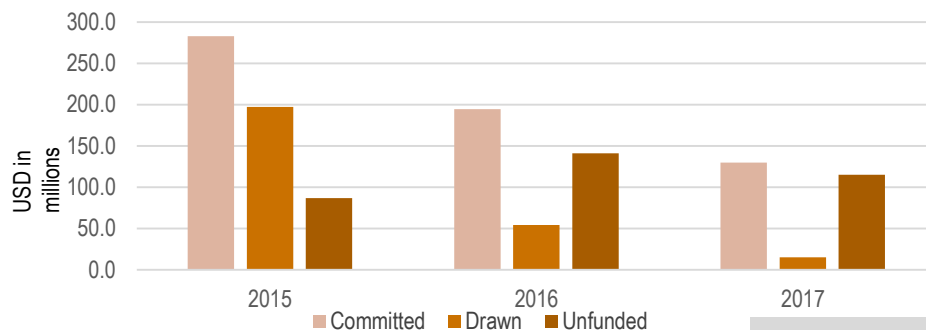
ERS remains in the early stages of building its private infrastructure portfolio

### Private Infrastructure Allocation

- \$509 million private infrastructure NAV<sup>1</sup>
- \$28.5 billion in total plan assets<sup>1</sup>
- Target allocation: 7.0%
- Actual allocation: 1.8%

### Portfolio Summary by Vintage

- \$1,013 million committed<sup>1</sup>
- 10 funds
- 8 co-investments; 3 legacy investments



<sup>1</sup> Estimated as of December 31, 2017

# Portfolio Snapshot

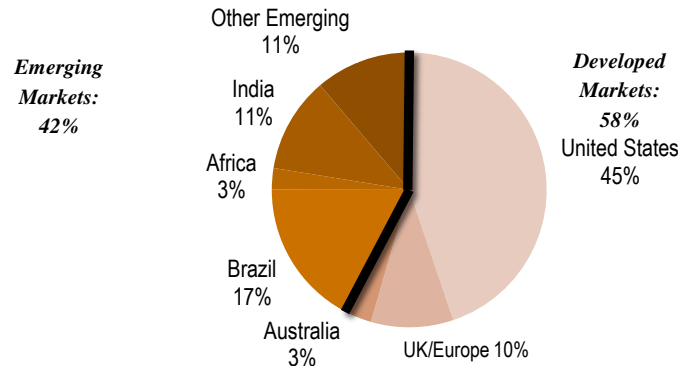
## Geographic & Industry Exposure



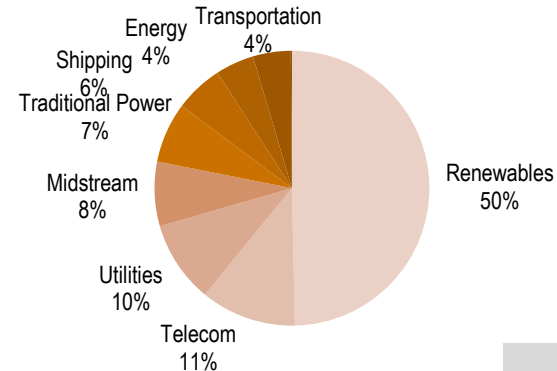
ERS' infrastructure portfolio remains in the early stages of diversification

- ERS' private infrastructure portfolio includes commitments to 10 fund partnerships, eight co-investments, and three legacy investments across seven manager relationships
- The program will eventually provide exposure to most major segments of the private infrastructure industry

### Private Infrastructure Allocation



### Portfolio Summary by Industry



III:

## Private Infrastructure Overview



PAVILION

# Infrastructure Market Overview



## Infrastructure Market Characteristics

- A 2016 McKinsey study estimated that \$3.3 trillion needs to be invested each year to 2030 in order to support current economic growth rates.
- Led by China, developing economies accounted for 62% of the total amount spent on infrastructure in 2016; this percentage is expected to rise slightly over the next few years.
- Infrastructure spending has had a high correlation with GDP growth; average annual global growth is projected to continue at 3.0% from 2017-2020.

## Current Infrastructure Trends

- The Trump Administration has discussed a \$1 trillion plan to revamp U.S. infrastructure, with funding coming from tax-incentivized private capital. No concrete steps have been taken to implement this plan, but the industry remains encouraged at its elevated profile.
- Investor interest in private infrastructure continues to be at a high level, leading to robust fundraising.
- Robust fundraising has led to greater competition for deals and higher asset valuations.

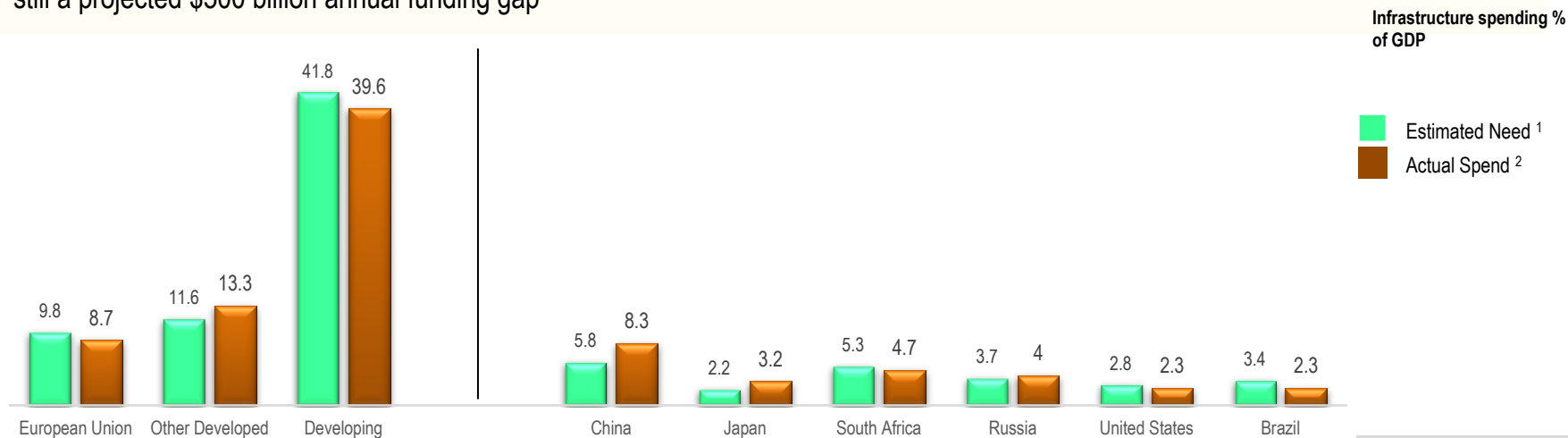
## Future Infrastructure Trends

- Today's fully valued assets will likely lead to lower returns going forward.
- The U.S. will eventually follow in the footsteps of Canada, Australia, and Europe and privatize a greater portion of its infrastructure.
- Renewables may lose their luster as a flood of capital for social, political, and environmental reasons lowers returns and artificial supports (tax credits, subsidies, and mandates) fall away.

# Need For Capital

## Infrastructure Needs

- The OECD projects that approximately \$53 trillion of worldwide infrastructure investment is needed by 2030
- Global consulting firm McKinsey estimates a similar amount: \$49 trillion. Assuming national governments allocate 3% of GDP there is still a projected \$500 billion annual funding gap



1) Estimated need based on projected growth, 2017-35

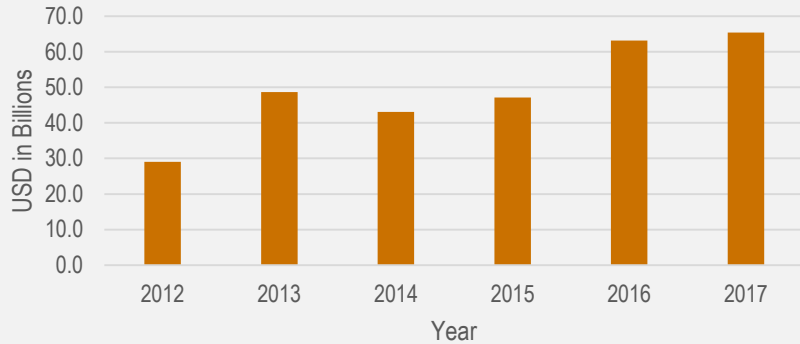
2) Weighted average annual expenditure over years of available data, 2010 - 2015

SOURCE: ITF; GWI; HIS Global Insight; OECD, 2007; McKinsey Global Institute analysis

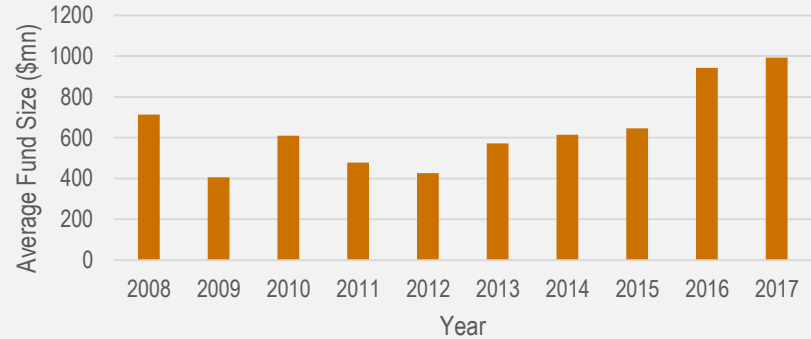
# Private Infrastructure Fundraising



## Historical Fundraising



## Average Fund Size



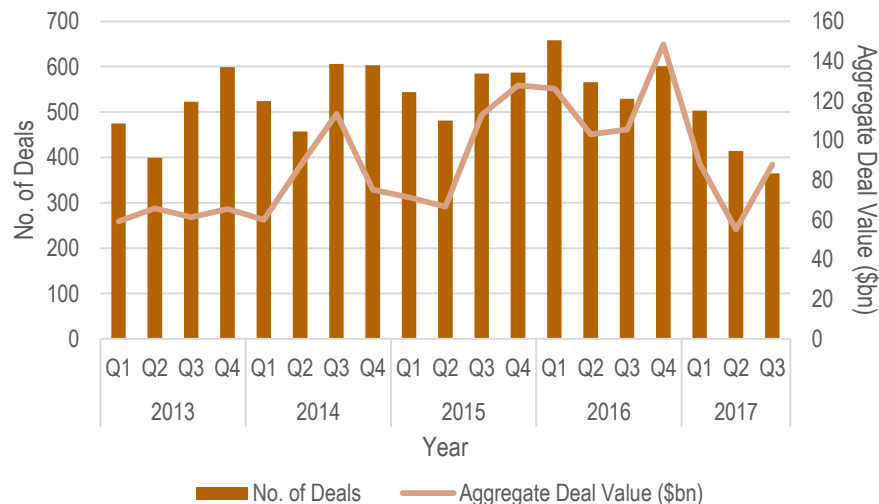
## Infrastructure Fundraising Trends

- Total private infrastructure fundraising and average fund size remain high
- 97% of the aggregate capital raised in Q3 2017 was raised in North America and Europe
- Billions of infrastructure debt is also being raised, despite low single-digit returns
- Over the past ten years, infrastructure funds have spent an average 21 months in the market

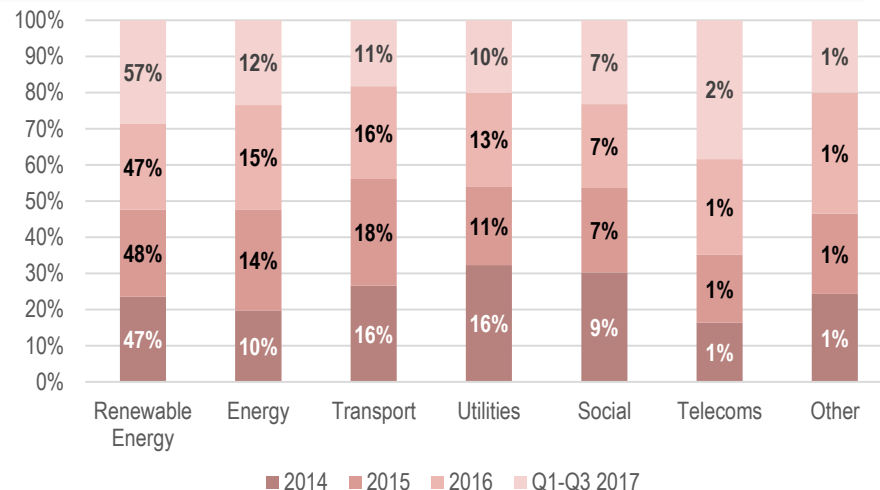
# Private Infrastructure - *Investments*



## Historical Investments



## Infrastructure Deals by Primary Industry



## Infrastructure Investment Trends

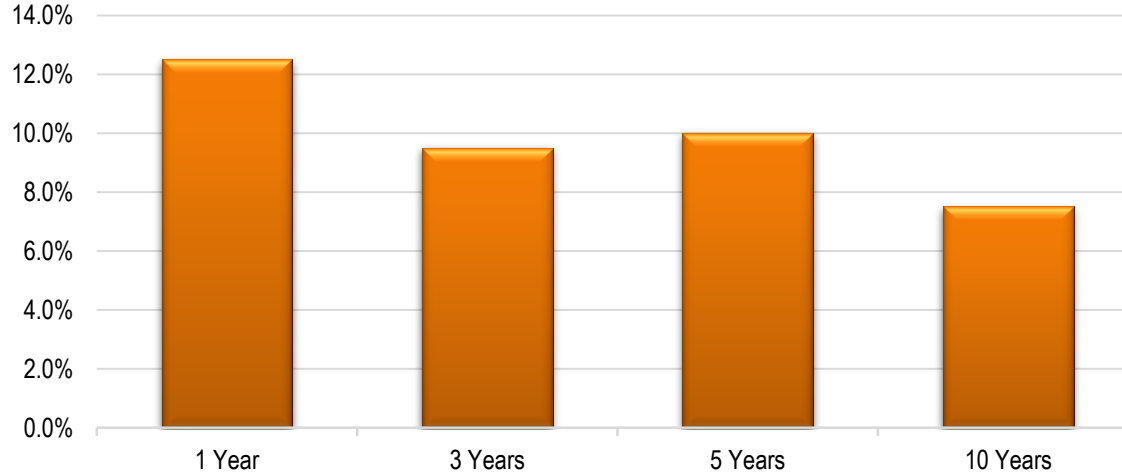
- Infrastructure deal flow volume has been trending downward since the Q1 2016 peak
- Aggregate deal value peaked in Q4 2016
- Renewable Energy, Traditional Energy, Transport, and Utilities remain the top industries for deal flow
- 88% of the deals executed in Q3 2017 happened in North America and Europe, with the remaining 12% being executed in Asia and the rest of the world



# Private Infrastructure Performance



## Historical Average Returns for Global Private Infrastructure



Source: Cambridge Associates. The chart shows the average private global infrastructure returns based on the Cambridge Associates LLC Infrastructure Index as of June 30, 2017.

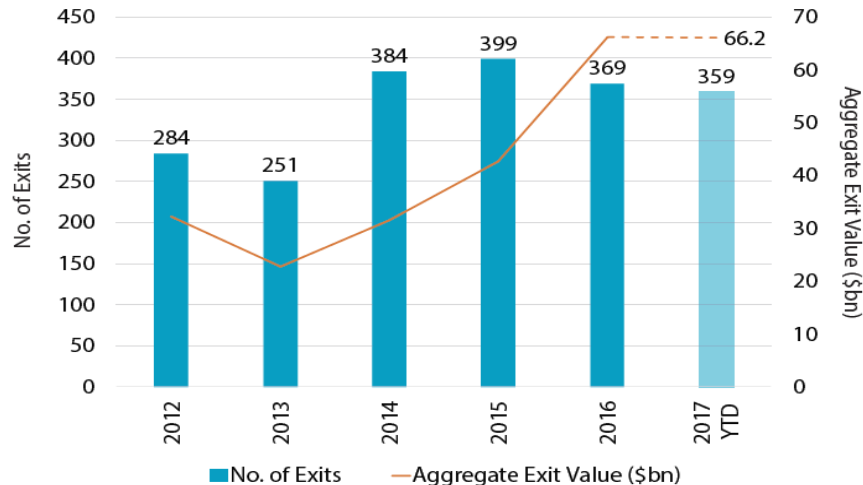
- Agenda item 8.1 - Meeting book dated March 7, 2018



# Private Infrastructure - Exits

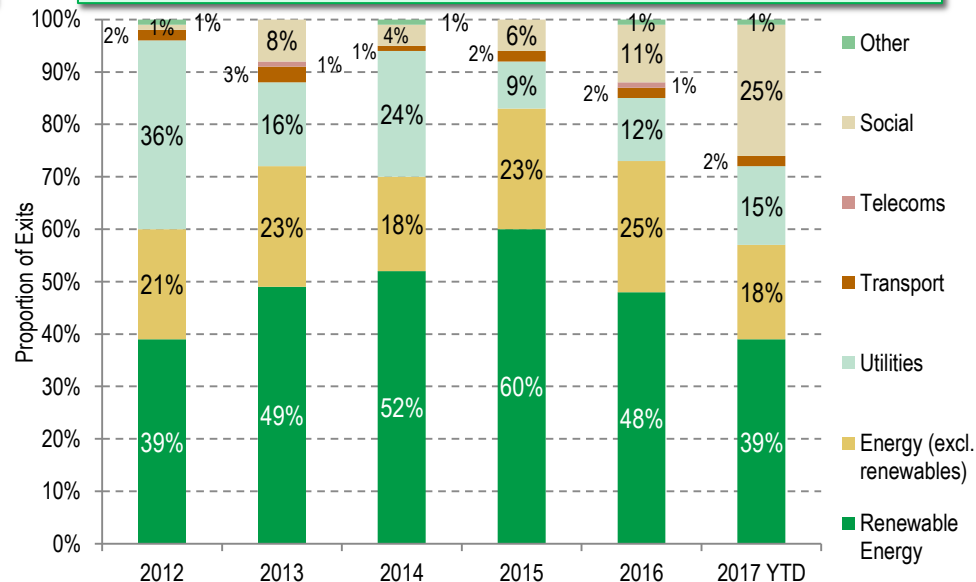


North American Infrastructure Exits by Year<sup>1</sup>



Source: Preqin Infrastructure Online

North American Exits by Industry<sup>1</sup>



## Infrastructure Exit Trends

- Once final figures are in, we may see the number of North American exits in 2017 reach the record levels of 2015
- The aggregate value of exits has grown rapidly since 2013, although likely to plateau from 2016 to 2017
- Exits from social infrastructure have increased as renewable energy continues to decline
- Despite the decline noted above, renewable energy remains the largest sector



IV:

## Outlook, Challenges, & Recommendations



PAVILION

# Market Outlook for Infrastructure



- Investors will continue to expand their infrastructure activities
- The midstream sector appears attractive, given the recovery in oil and gas prices
- Private infrastructure opportunities in the U.S. should continue to develop and grow, aided by the Trump administration's favorable stance
- The definition of infrastructure will expand, as managers go further afield to find attractive deals in competitive markets
- Co-investments—and even direct investments—will become increasingly important for larger investors



# Challenges in Infrastructure Investing



- Too much capital chasing large, auctioned deals
- Premium valuations of—and lower expected returns from—core infrastructure assets
- Geopolitical risk in emerging markets
- Regulatory risk everywhere
- Limited track records of many managers
- Executing co-investments and direct deals with a small staff

# Recommended Approach

## *Actions for Fiscal Year 2018 - 2019*



### **General**

- Invest with, or alongside, top managers possessing operational expertise and a local presence
- Avoid mega funds, focus on mid-market managers
- Proceed with caution in emerging markets
- Maintain modest and realistic return objectives

### **Specific to ERS**

- Move towards core strategy target by adding exposure
- Avoid new commitments to power funds—both traditional and renewable
- Add to European exposure, which is underweighted in the ERS portfolio
- Raise the General Partner concentration cap and target to reflect early stage of program and to avoid manager proliferation

Questions?



## Public Agenda Item #8.2

*Proposed Revisions to the Private Infrastructure Guidelines and  
Procedures – (Action)*



March 7, 2018

Pablo de la Sierra Perez, Director Infrastructure and Natural Resources



# ERS Private Infrastructure Guidelines and *Procedures Recommended Changes*



- Section I.C.1 Private Infrastructure Total Return:
  - Amend the long term infrastructure benchmark from CPI+4.5% to CPI+4.0%
- Minor clean-up

Questions?  
**Action Item**



## Public Agenda Item #8.3

*Consideration of Proposed Private Infrastructure Annual Tactical  
Plan for Fiscal Year 2018 – Fiscal Year 2019 – (Action)*



March 7, 2018

# ERS Private Infrastructure Tactical Plan



## *FY2018 - 2019 IAC and Board Approval Request*

- Review and consideration of FY2018-2019 ERS Private Infrastructure Annual Tactical Plan:
  - **FY 2018:** targeting \$400MM +/- 30% (\$280MM - \$520MM)
  - **FY 2019:** Propose to invest in 6-8 investments with commitments totaling \$450MM (including co-investments/direct investments)
    - Commitment target range +/- 30% (\$315MM - \$585MM)
  - Seek to diversify from a sector perspective
  - Seek capital aggregation platforms to gain scale and size
  - Continue to focus on co-investments / direct investments and establishing key relationships

Questions?  
**Action Item**



## Public Agenda Item #9.1

*Set date for the next Joint meeting of the ERS Board of Trustees and Investment Advisory Committee, the next meeting of the Board of Trustees and the next meeting of the Audit Committee*



March 7, 2018

# Next Meeting Dates



## 2018 Meeting Dates

Wednesday, May 23, 2018

Wednesday, August 29, 2018

2 Day Workshop:

Tuesday – Wednesday, December 11-12, 2018

Questions?





## Public Agenda Item #10.1

### *Adjournment of the Joint Meeting of the Board of Trustees and Investment Advisory Committee*



March 7, 2018